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## GOVERNOR'S OFFICE OF ELECTRONIC HEALTH INFORMATION (GOEHI)

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## Kentucky Strategic and Operational Plan for Health Information Exchange

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## I. KENTUCKY STRATEGIC PLAN FOR HEALTH INFORMATION EXCHANGE

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The Kentucky Health Information Exchange (HIE) Cooperative Agreement Grant represents an unprecedented opportunity to advance the use of electronic health information exchange and support healthcare providers and organizations across the Commonwealth of Kentucky in achieving stage 1 meaningful use. To this end, Governor Steve Beshear issued an Executive Order in August 2009 establishing the Governor's Office of Electronic Health Information (GOEHI) in the Cabinet for Health and Family Services for advancing health information exchange in Kentucky. The Commonwealth's first State Health Information Technology (IT) coordinator, who serves as the GOEHI Executive Director, was hired in May 2010. The first meeting of the Kentucky Health Information Exchange (KHIE) Coordinating Council was held on May 28, 2010.

The creation of the KHIE Coordinating Council and six committees which support the council acknowledges the role of state government in assuring statewide access to HIE to support meaningful use while mindful of the fact that government simply cannot do it alone. A strong public-private partnership in which each stakeholder accepts responsibility and commits to the effort is required to support a venture of this magnitude. The six committees of the KHIE Coordinating Council are: Accountability and Transparency Committee; Business Development and Finance Committee; Interoperability and Standards Development Committee; Provider Adoption and Meaningful Use Committee; Privacy and Security Committee; and, Population Health Committee.

The Kentucky Strategic and Operational Plan for HIE is the first product of this collaborative governance structure for the KHIE. Council and Committee members set aside time from their busy schedules to study the issues and prepare a written set of recommendations which were used in the development of the Plan. The Plan is largely a product of their work and the next step in advancing the vision for health IT that will lead to improved health outcomes, quality of care, safety and efficacy, and population health.

The Plan addresses the ONC requirements as specified in the Fund Opportunity Announcement (FOA), Grantee Requirements issued by ONC in March 2010, and the July 6, 2010 Program Information Notice from ONC. The Operational Plan includes a detailed cross walk that links the proposed strategies to the ONC requirements, including the key accomplishments to be met in the first two years.

The Strategic Plan describes the current health IT landscape in Kentucky. While noting the immediacy of the task and the challenges that lie ahead, the Plan describes the collaboration that will occur with the Regional Extension Centers (RECs) and other state and community-based resources as local expertise is mobilized to support adoption of electronic health records (EHR), connectivity to HIE, integration of e-prescribing, bi-directional exchange of laboratory information, and exchange of patient care summaries into clinical practice. The Operational Plan identifies the actions that need to occur to expedite the deployment of HIE and assure that healthcare providers and organizations have at least one option to use in meeting stage 1 meaningful use. It also

describes the steps that will be taken to develop public trust, assure privacy and security, and build financial sustainability for the KHIE.

Before proceeding with the Plan, one final statement of context is required. The KHIE is a public good that will create value and serve the needs of all Kentuckians. For this reason, the Population Health Committee recommended and the KHIE Coordinating Council agreed that the following principles should underscore the business, technology, and operation of the KHIE:

- The focus of the KHIE is on improving the health, quality and safety of healthcare for Kentucky's residents and visitors through the provision of a statewide, interoperable health information exchange.
- Secure exchange of health information is essential to transforming healthcare and protecting and improving population health and must supersede technical, business, and bureaucratic barriers.
- The KHIE must initially provide for the functionality necessary to support meaningful use, and expand over time to provide for continuous quality improvement in quality and coordination of care.
- The value of information increases with use, and the value of one set of information increases when linked with other information.
- Consumption of health information exchange services by one stakeholder does not reduce availability for others, and no healthcare stakeholder can be effectively excluded from appropriately using interoperable health information exchange services.

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### A.1—ENVIRONMENTAL SCAN

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Bipartisan legislation enacted in 2005 called for the creation of a secure interoperable statewide electronic health network attached to the Cabinet for Health and Family Services (CHFS). The vision for a statewide health information exchange became the basis for the 2007 Kentucky E-Health Action Plan, which was developed by the Kentucky E-Health Network Board. The E-Health Action Plan's eight objectives highlighted the interconnected activities that must be accomplished on many levels to realize the vision for health information technology in Kentucky. It pointed to the fact that there is no one sector with sole responsibility for realizing the vision. Every stakeholder group and quadrant of the health sector—purchasers, payors, providers, and practitioners—has a role to play in achieving the Action Plan's objectives to:

1. Foster improvement in quality of care and health outcomes while containing health care costs
2. Facilitate statewide health information exchange
3. Foster consumer empowerment through health information technology and health information exchange
4. Foster increased use of health information technology
5. Facilitate and collaborate with local health information exchange efforts
6. Collaborate with federal and interstate E-Health efforts

7. Implement findings and recommendations from the Kentucky E-Health Privacy and Security Collaborative
8. Link E-Health with economic development efforts

The 2007 E-Health Action Plan remains largely relevant today as a vision statement. Although it does not have the level of detail required to fully operationalize statewide health information exchange and achieve meaningful use, it produced a number of research products that provide a foundation for the Kentucky Strategic and Operational Plan for HIE. A brief description of those efforts follows in Table A-1:

<b>Table A-1</b> <b>Key Initiatives from the Kentucky E-Health Action Plan</b>	
<b><i>E-Prescribing Partnerships in Kentucky Grants: 2 Rounds of Grants Awarded during the period from 2006 - 2008</i></b>	<p>Ten demonstration projects were funded with state, federal, and foundation funds to encourage health information technology adoption by making it more affordable; and, developing relationships and work patterns that support electronic information sharing among community providers. Participants included community pharmacies, Federally Qualified Health Centers and other primary care clinics; HealthBridge (a northern KY RHIO); and, physician offices.</p>
<b><i>Medical Trading Area Analysis Project</i></b> by Ray Austin, PhD, Department of Health Management and Systems Sciences School of Public Health and Information Sciences and Carol Hanchette, PhD, Department of Geography and Geosciences, School of Arts and Sciences, University of Louisville	<p>The study used five de-identified, aggregated datasets: 1) Kentucky Medicaid claims data; 2) Kentucky Hospital Association inpatient hospital discharge data; and, private insurance claims data from 3) Anthem Blue Cross Blue Shield, 4) Bluegrass Family Health; and 5) Humana. An iterative process, using a series of mapping and spatial analysis techniques, was used to examine these data sources separately, and then integrate them to establish medical trade areas. In all nearly 72 million records representing county of origin and county of destination were used to identify patient flow to receive medical care. The final report released in 2008, arrived at ten medical trading areas ranging in size from eight to twenty-one counties and containing populations ranging from roughly 187,000 to nearly one million. In presenting their findings, the authors noted the need for further analysis.</p> <p>The analysis closely correlates to the nine Hospital Referral Regions identified by the Dartmouth Health Atlas that cover Kentucky and parts of Tennessee, Illinois, Indiana, and West Virginia.</p>
<b><i>Health Information Technology Adoption by Kentucky Health Care Providers</i></b> by Dr. Carol L. Ireson, RN, PhD, Associate Professor College of Public Health University of Kentucky and Dr. Martha Riddell, DrPH, Assistant Professor College of Public Health University of Kentucky	<p>A cross-sectional survey was administered to establish a baseline on the level of health information technology adoption among Kentucky's healthcare providers, including physicians (community based and hospital-based practices), hospitals, home health agencies, long term care facilities, hospitals, community mental health centers, and public health departments. The findings, which were reported in 2008, provide a statewide snapshot of EMR adoption for the Commonwealth.</p>
<b><i>Multi-State Health Information Privacy and Security Collaboration (HISPC)</i></b>	<p>Kentucky was one of 33 states awarded a contract to participate in the Health Information Security and Privacy Collaboration (HISPC). A stakeholder community of more than 60 volunteers was assembled to assess at the state and local levels how privacy and security practices and policies affect health information exchange. The stakeholder group produced a number of important findings, recommendations, and solutions in the following domains: statutory, regulatory, administrative or organizational, technological, and public awareness and education.</p>

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### A.1.1—THE KENTUCKY HEALTH INFORMATION EXCHANGE (KHIE)

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Funded through a \$4.9 million Medicaid Transformation Grant (MTG), the KHIE is currently being piloted in six hospital systems and one clinic. It began operations on April 1, 2010. The KHIE provides the technical infrastructure to allow for data exchange with health care facilities, provider electronic health records, and existing or emerging Regional Health Information Organizations (RHIOs) across the state. The core components of the statewide KHIE include: a master patient/person index; record locator service; security; provider/user authentication; logging and audits; and alerts. The system supports electronic prescribing, patient demographics, laboratory and imaging reports, past medical diagnoses, dates of services, hospital stays, a statewide immunization registry, and a provider portal. The hybrid framework is vendor and technology agnostic with the focus on enabling optimal connectivity and interoperability, and the functionality to support stage 1 meaningful use.

The goal of the KHIE is to assure that all providers have access to at least one option to support health information exchange and the functionality required to achieve meaningful use. (Use is not restricted to Medicaid or Medicare providers.) Providers who do not have an electronic medical records (EMR) system have the option of using an EMR-Lite product or a provider portal to a virtual health record. The intent of which, is to serve as an entry point and a bridge to full use of an EMR. The EMR-Lite will provide at a minimum a view of patient demographics, laboratory and image reports, medication histories, allergy histories, past medical diagnosis, date of services, hospital stays, immunizations, and e-prescribing.

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### A.1.2—REGIONAL HEALTH INFORMATION ORGANIZATIONS

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Kentucky has three RHIOs in various stages of development. HealthBridge, which serves five Kentucky counties in the Greater Cincinnati area, was founded in 1997. The Northeast Kentucky RHIO is currently under development and in pilot testing. The Louisville Health Information Exchange (LouHIE), a not-for-profit 501(c) 4 corporation, is under development. A brief description of each follows:

- **HealthBridge.** HealthBridge is a not-for-profit health information exchange serving Greater Cincinnati, Ohio, including Northern Kentucky. HealthBridge provides connectivity for 29 hospitals, more than 4400 physician users, 17 public health departments, and dozens of physician offices and clinics as well as nursing homes, independent labs, radiology centers, and other health care entities. Each month, more than 3 million clinical lab tests, radiology reports, and other results are transmitted electronically through the secure technology network and clinical messaging system. On January 29, 2010, HealthBridge signed a memorandum of understanding with GOEHI to develop connectivity to the KHIE and share clinical data. Regular meetings are held between KHIE and HealthBridge technical staff.
- **Northeast Kentucky Regional Health Information Organization (NEKY RHIO).** Kentucky's Morehead State University and St. Claire Regional Medical Center partnered to bring a diverse stakeholder group together to develop and incorporate a RHIO in 2008 to

serve a 17-county area in rural Northeastern Kentucky. The RHIO, which received an \$85,000 Network Planning Grant Program award from the Department for Health and Human Services in 2009, has contracted with HealthBridge and is currently being piloted and expected to go-live later this year. The providers participating in the pilot include: a regional medical center, a community hospital, a state university medical center, and a federally qualified health center. As the RHIO matures, the service area is expected to expand to include adjacent counties and possibly counties in West Virginia as two hospitals serving on the RHIO's Board of Directors also have hospitals located in that state.

- **Louisville Health Information Exchange (LouHIE).** LouHIE was formed in January 2006 to serve as a community health information exchange for the greater Louisville area, including adjacent Southern Indiana communities. It is in the formative stages as members explore the technical options for HIE best suited to the needs of the community.

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### A.1.3—REGIONAL EXTENSION CENTERS

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Kentucky has two Regional Extension Centers (RECs) grantees providing coverage for each of the state's 120 counties. HealthBridge is the grantee for the Tri-State Regional Extension Center, which serves 37 counties in Northeast and Central Kentucky, and portions of Southwestern Ohio and Southeastern Indiana. The Kentucky partners supporting the Tri-State REC include: the Northeast Kentucky RHIO, Morehead State University, Northern Kentucky University, Healthcare Excel, and the University of Kentucky. The University of Kentucky is also a REC grantee. The UK REC service area is comprised of the 83 counties outside of the Tri-State service area in Kentucky. The two RECs will offer a range of services, to include:

Table A.3-1 Regional Extension Center Services in Kentucky		
Education & Outreach to Providers	Implementation & Project Management	Privacy & Security
Participation in National Learning Consortium Activities	Practice & Workflow Redesign	Progress Toward Meaningful Use
Vendor Selection & Purchasing	Interoperability & HIE	Workforce Development

For the first two years of the project, the focus of the RECs will be on:

1. Individual and small group primary care practices (10 or fewer physicians, physician assistants, and nurse practitioners with prescription privileges),
2. Clinicians in public and critical access hospitals, community health centers, and in other settings that predominately serve uninsured, underinsured, and medically underserved populations.

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### A.1.4—ELECTRONIC-PRESCRIBING

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SureScripts, the country's leading e-prescribing network, reports a gradual increase in the percentage of prescriptions routed electronically in Kentucky; however, the rate of use is still very



low. Similarly, while the number of physicians routing prescriptions electronically has increased, less than one in five physicians are reported to be doing so. On a more positive note, the number of community pharmacies with the capacity to engage in e-prescribing has risen to 85%. The following table summarizes Kentucky's e-prescribing practices as reported by Surescripts:

<b>Table A.5-1 Kentucky Progress Report on Electronic Prescribing</b>			
	<b>2007</b>	<b>2008</b>	<b>2009</b>
Percent of Visits Involving a Prescription Benefit Request	2%	3%	12%
Percent of Eligible Prescriptions Routed Electronically	1%	3%	8%
Percent of Patient Visits Involving a Medication History Response			3%
Percent of Physicians Routing Prescriptions Electronically	4%	10%	16%
Physicians Routing Prescriptions at Year End	277	613	1,000
Percent of Community Pharmacies E-Prescribing	60%	69%	85%
Community Pharmacies Activated for E-Prescribing at Year End	619	742	879

Source: SureScripts, accessed on 08/12/10 from:  
<http://www.surescripts.com/about-e-prescribing/progress-reports/state-progress-reports.aspx>

Conversations with key stakeholders across the state confirm a low rate of e-prescribing by physicians. In a survey conducted in 2009 by the Kentucky Medical Association (KMA), 22 percent (n=249) of practices reported employing an e-prescribing system other than a fax-machine. Of interest and confirming what is commonly thought, the 2009 KMA survey analysis noted a correlation with respect to the population of the physician's service area and use of an e-prescribing system—the larger the county's population, the more likely the practice possesses an e-prescribing system. Regardless of whether the rate is 22 percent or 16 percent, the rate of adoption is low and speaks to the sizeable task ahead.

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### **A.1.5—CLINICAL LABORATORIES**

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Earlier this year, the Cabinet for Health and Family Services leadership worked with the Kentucky General Assembly during the 2010 Session to revise the Kentucky Revised Statutes to permit medical laboratory results to be transmitted to an electronic health information exchange or network for specified purposes with patient consent and in compliance with HIPAA. Prior to the revision, KRS 333.150 specified that the results of the laboratory test could only be provided to the clinician or authorized person who requested the test. With this change in statute, laboratory test results may be exchanged electronically. This change opens the door for the state public health laboratory to exchange lab results through the KHIE.

**State Public Health Laboratory:** The KHIE will provide the technical platform for electronic exchange of health information statewide and a mechanism for bi-directional exchange through which hospitals and clinicians can electronically submit reportable lab results to the Department



for Public Health (DPH), Division of Laboratory Services (DLS) and satisfy stage 1 meaningful use criteria. Work is underway to complete development of the functionality to support data validation, translation, and transformation of source data from the DLS laboratory information system into a standard message format for transmission to (and receipt of data) external parties, including the Public Health Information Network (PHIN). Connectivity of Laboratory Information System (LIS) currently is in testing and in the final stages of implementation.

**Commercial Laboratories:** In response to the July 6, 2010 Program Information Notice (PIN) from the Office of the National Coordinator (ONC), GOEHI obtained a list from the Kentucky Medicaid program of payments made to clinical laboratories over the previous twelve month period. From this list, the ten laboratories receiving the highest amount of Medicaid payments were identified. (The combined total of receipts for the ten labs was 88 percent of the total payments made to laboratories during the period.) In a telephone survey of the labs, seven of the ten (70 percent) reported currently producing and delivering structured lab results to physicians and hospitals in Kentucky. Five of the seven reported having the capacity to receive orders electronically; one indicated the intent to work on it over the next few months; and, one indicated that it might take steps to develop the capacity if there is a demand for the service. The survey found that approximately 60 percent of the total results delivered in Kentucky by the seven labs are done so electronically (ranging from 20 percent to upwards of 90 to 95 percent). Approximately 43 percent of the providers served by the seven labs in Kentucky are receiving structured lab results electronically (ranging from a low of 15% to a high of 90 to 95 percent of providers).

In conjunction with the pilot of the KHIE, connectivity between the KHIE and at least one commercial lab and the state public health lab will be established and will go live by November 2010. The KHIE has been in discussion with three labs doing business in Kentucky holding regular meetings to discuss connectivity and identify and plan for potential issues that might impact lab participation in HIE. Two of the lab's are among Kentucky's largest providers. The third is smaller in size and operations to a number of smaller labs serving the Commonwealth.

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#### A.1.6—PUBLIC HEALTH: IMMUNIZATION, SYNDROMIC SURVEILLANCE, AND NOTIFIABLE LABORATORY RESULTS

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In addition to the State Public Health Laboratory, the State Immunization Registry went into pilot August 2010. As with the LIS, the KHIE will provide the technical platform to support the bi-directional exchange of immunization data between the Immunization Registry and the healthcare provider.

The Kentucky Cabinet for Health and Family Services (CHFS), which includes the Department for Public Health (DPH), is strongly committed to the development and use of health information technology (HIT) and electronic health information exchange to support an integrated system of infectious diseases surveillance (such as influenza), information-sharing, consultation, verification, and public health response. The Department for Public Health (DPH) is now seeking funding from the Centers for Disease Control and Prevention (CDC) to develop interoperability between the

KHIE, which will serve as the exchange platform, and the syndromic surveillance system. The goal is to link the KHIE to the National Electronic Disease Surveillance Systems (NEDSS).

Laboratory messages will be mapped in to HL7 2.5 format and validated against National Public Health Information Network (NPHIN) VADS via the CDC's public health messaging subsystem, also known as PHIN MSS. The output of the harmonization process will result in an appropriate PHIN/VADS value set wrapped in an HL7 2.531 XML message that will be securely routed to the future NEDSS Based System via PHIN MS to any desired receiving system that has implemented a PHIN MS receiving queue. This will result in standardized laboratory results that conform to the PHIN influenza case notification standard to flow between the submitting system LIS, the KHIE, exchange partners and stand alone communicable disease surveillance systems, including the Disease Surveillance Module currently used by the Department for Public Health's Division of Epidemiology.

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#### A.1.7—KY-CHILD (KENTUCKY CERTIFICATE OF BIRTH, HEARING, IMMUNIZATION, AND LAB DATA)

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KY-CHILD, which won an American Council for Technology interagency award in 2007, allows the electronic submission of data related to birth certificates for newborn metabolic and hearing screenings. Upon entry of birth information into the system by the hospital, a unique identifier is generated and all the information about the child is available through a single, integrated Web application. The functionality of the KY-CHILD is being integrated into the KHIE so that the initial hearing and laboratory newborn screening results, immunizations, and other data contribute to a virtual health record for each of the state's 55,000-plus infants born each year in Kentucky.

The development and implementation of KY-CHILD required the state to work closely with a number of external and internal business partners, including Kentucky's 59 birthing facilities in medical centers and smaller community hospitals, audiologists, and the state's public health laboratory, maternal child health program, and Commission for Children with Special Health Care Needs. The first-hand experience acquired during the system's rollout and the social capital that was created now are being applied to the rollout of the KHIE.

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#### A.1.8—HEALTH PLANS

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Among the five health plans that account for 99 percent of the Kentucky market, each supports electronic eligibility and claims transactions. The five health plans in Kentucky are: Aetna, Anthem, Bluegrass Family Health, Humana, and United Health Care. The two leading health plans, Humana and Anthem, account for nearly 75 percent of the market share in Kentucky and are represented on the KHIE Coordinating Council and the Interoperability and Standards Committee.

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#### A.1.9—ADOPTION OF ELECTRONIC HEALTH RECORDS

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**Recent Adoption Surveys Among Physicians:** Two statewide surveys were completed in 2009 to assess the adoption of EMRs by physicians. In a Kentucky Medical Association (KMA) survey of its

members, 39 percent of the respondents reported having an electronic medical record. As previously reported, 22 percent of the respondents reported e-prescribing outside of the use of a fax machine.

The second survey was a telephone survey conducted by SK&A, a telephone marketing firm, in September 2009. The survey of office-based prescribing physicians reports county-level adoption rates, which can be found in the attached Hospital Referral Region (HRR) Profiles. The statewide adoption rate was 24 percent while regional adoption rates varied widely across physicians in eight HRRs from 17 percent to 40 percent as shown in the following table.

<b><i>Kentucky Physician EMR Adoption Rate by Hospital Referral Region (HRR) - 2009</i></b>								
HRR	Paducah	Owensboro/ Evansville	Louisville	Lexington	Covington	Ashland/ Huntington	Bowling Green/ Nashville	Bell County/ Knoxville
Adoption Rate	17.6	21.3	25	40.6	21.3	24.7	26.6	17

Source: SK&A, September 2009 Telephone Survey from a January 2010 report produced for CHFS

In early 2010 the KMA conducted a survey with funding from the KMA Rural Scholarship Fund in preparation for assisting physicians in the state's underserved areas with obtaining Medicare/Medicaid incentive payments for EHR adoption and meaningful use. The survey questionnaire was sent to physicians practicing in the 40 counties classified by the Scholarship Fund as being underserved. The survey, which had 23 percent response rate and 95 percent confidence level, reports a 55 percent adoption rate and that 73 percent either use or plan to have such a system within one year. Among the barriers to adoption reported by respondents: money; concern about loss of productivity; lack of technical support within the practice; finding the right system for the practice; and technical or computer skills of physicians and staff. The reported benefits of EMR use were: coding; communication and workflow; and access to current patient data. In regard to proposed meaningful use criteria, the survey reports that among EMR users:

- 94 percent do not share information with the local hospital
- 83 percent do not share information with the local pharmacy
- 89 percent do not share information with other physicians
- 34 percent do not know if the system submits claims
- 51 percent do not know if the system generates lists of patients by condition
- 57 percent do not know if the system reports quality measures to Medicaid and Medicare
- 77 percent do not provide electronic copies of records to patients or don't know if the system provides such copies

## **2008 Provider Adoption Survey of Physicians, Hospitals, and Other Healthcare Providers:**

In 2007, the Cabinet for Families and Children contracted with the UK College of Public Health to conduct a statewide e-health inventory and needs assessment of an array of healthcare providers and organizations. A cross-sectional survey was administered to establish a baseline on the level of health information technology adoption among Kentucky's healthcare providers. Survey questionnaires were mailed to a sample of licensed physicians (MDs and DOs) actively practicing in Kentucky. Electronic surveys were also mailed to pharmacists, hospitals, home health agencies,

hospices, long term care facilities, optometrists, podiatrists, mental health programs, Kentucky Primary Care Association members, medical group practice managers, and health departments. Findings from the survey follow:

#### Physicians:

Thirty five percent (35%) of physicians surveyed (n=3,178) reported using electronic medical records (EMRs). Other survey findings regarding physician use of EMRs are summarized in the following table:

<b>Table A.3-2</b> <b>KY Health IT Adoption Survey 2008</b> <b>Ireson &amp; Riddell, UK College of Public Health</b> <b>Practice Description and Use of Electronic Medical Records</b> <b>Among Physician Respondents</b>				
n=Number of Responses	Overall n=609	Users of EMR n=239	Planners n=145	Non- planners n=225
Solo primary care practice	21.3%	15.9%	14.5%	31.6%
Primary care group or partnership	20.4%	21.3%	25.5%	16.0%
Solo specialty care practice	21.5%	18.4%	10.3%	32.0%
Single specialty group or partnership	21.2%	24.2%	26.2%	14.7%
Multi-specialty group or partnership	13.0%	16.3%	22.1%	3.6%
Other	2.6%	3.8%	1.4%	2.2%

Source: Ireson, C., Riddell, M. (2008), Health Information Technology Adoption by Kentucky Health Care Providers, 2008, Accessed on 9/25/09 at:

<http://ehealth.ky.gov/board/Documents/Board%20Documents/HIT%20Adoption%20Report%202008.pdf>

When asked in the UK survey what would be the greatest help in moving their practice to an EHR, the respondents noted the following:

<b>Table A.3-3</b> <b>KY Health IT Adoption Survey 2008</b> <b>Ireson &amp; Riddell, UK College of Public Health</b> <b>Greatest Help in Moving Practice to Electronic Medical Record</b>					
Respondents	Internet Access	Funding	Technical Support	Other	Number of Respondents
Among <u>users</u> of EMR(s)	27%	59%	55%	20%	82
Among those <u>planning</u> to implement EMR(s)	5%	63%	29%	18%	142
Among those <u>not planning</u> to implement EMR(s)	3%	73%	26%	19%	211

Source: Ireson, C., Riddell, M. (2008), Health Information Technology Adoption by Kentucky Health Care Providers, 2008, Accessed on 9/25/09 at:

<http://ehealth.ky.gov/board/Documents/Board%20Documents/HIT%20Adoption%20Report%202008.pdf>

When asked about participation in a Regional Health Information Organization (RHIO):

- 13 percent currently participate
- 20 percent expressed a moderately high or high level of interest in participating

- 53 percent reported a low level of interest in participating

When asked to rate these priorities to move Kentucky to an electronic-health information technology environment:

- 64 percent--funding for physicians for EMRs
- 16 percent--funding to hospitals for EMRs
- 9 percent--clinical messaging between providers
- 8 percent--consumer health records
- 5 percent--RHIOs or Health Information Exchanges

#### Hospitals:

Eighty three—69 percent—of Kentucky’s 120 hospitals (102 acute; 11 mental/behavioral health; 5 rehabilitation; and 2 long term acute facilities) responded to the UK survey. Among the technologies in use by respondents at the time of the survey:

- 96 percent have implemented HIT in patient accounts
- 78 percent use an electronic patient scheduling system
- 88 percent are in some stage of implementing an EMR
- 23 percent have fully implemented an EMR
- 75 percent are accessible in offsite clinics
- 74 percent provide access to on-site physician offices
- 67 percent provide access to off-site physician offices

When asked about hospital use of or plan to use HIT for clinical functions:

<b>Table A.3-4</b> <b>KY Health IT Adoption Survey 2008</b> <b>Ireson &amp; Riddell, UK College of Public Health</b> <b>Hospital Plans for Using HIT Clinical Functions</b>		
	Yes	No
Physician Notes	69%	31%
Nursing Notes	88%	12%
Medication Administration Record (MAR)	88%	12%
Computerized Physician Order Entry (COPE)	68%	32%
Electronic Prescribing to External Pharmacies	48%	52%

Source: Ireson, C., Riddell, M. (2008), Health Information Technology Adoption by Kentucky Health Care Providers, 2008, Accessed on 9/25/09 at:

<http://ehealth.ky.gov/board/Documents/Board%20Documents/HIT%20Adoption%20Report%202008.pdf>

When asked about how Kentucky should move forward to an electronic-health information technology environment, 66 percent of respondents rated funding to hospitals as a top priority. Among other findings from the responding hospitals:

- Top three barriers to beginning or expanding use of computer technology:
  - 63 percent rated initial cost of technology

- 42 percent rated ongoing costs of hardware/software
- 32 percent rated acceptance of technology by clinical staff
- Type Internet connection used
  - 99 percent broadband (DSL or cable modem) or faster connection (T1 or T3 line)
- Participation in local/regional arrangement to share patient information electronically
  - 35 percent participate in some type of health information exchange
  - 34 percent of those who do not are interested in participating in the future
  - 57 percent cited financial sustainability as a barrier to developing RHIOs/HIEs
  - 57 percent cited lack of fully developed technology to support RHIOs

#### Other Community Based Healthcare Providers:

The UK survey found hospices to be the largest users of EMRs with 84 percent of hospices reporting use of EMRs. Only 19 percent of Kentucky's licensed home health agencies use EMRs. A third group, 58 percent of community mental health centers use EMRs.

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### A.1.10—BROADBAND ACCESS

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Earlier this year, the Commonwealth Office of Technology (COT) (an agency of the Kentucky Finance and Administration Cabinet) was awarded ARRA funding through the State Broadband Data and Development Grant Program to conduct statewide data collection and mapping. The process of evaluating the current accessibility of high-speed Internet access in the state will occur in three phases: the collection of existing broadband services, verification of the collected data and the reporting of the results. Specifically, the statewide assessment will include data on the availability, speed, location and technology type of broadband services from public and private providers. The first report is due in September 2010 with a comprehensive, searchable map to be made publicly available in February 2011.

These findings are consistent with the 2008 UK Provider Survey, which noted that Internet connectivity did not appear to be a barrier to EMR implementation and is further supported by the 2010 KMA Rural Adoption Survey that that 90% of providers in the 40 rural counties reported broadband access (DSL, cable modem or faster). Bandwidth is a critical concern especially in Kentucky's rural areas as demand for high speed access and the volume and size of data transfers increase.

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### A.1.11—GAP ANALYSIS

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Regional data profiles corresponding to the Dartmouth Health Atlas's Health Referral Regions (HRR) that encompass Kentucky are included in Appendices A and B. The intent of the profiles is to provide an "on-the-ground" tool for GOEHI staff and others during statewide implementation of the KHIE and the delivery of adoption support for providers to assess priorities, coordinate efforts, and maximize reach. The profiles provide a snapshot of the healthcare market and to the extent possible, county-level data for EMR adoption among office-based physicians, pharmacies activated

for e-prescribing, and prescribers using e-prescribing within the previous 30 day period. The HRR also serve as a reminder that medical trade extends beyond state lines to include adjacent states.

## **Key Findings**

Below are the key findings which address adoption of HIE in Kentucky:

### **1. Access to the technical infrastructure to electronically exchange health information across unaffiliated organizations and providers in Kentucky is non-existent in most areas of the state.**

Discussion: Kentucky has three HIEs. These include the HealthBridge RHIO which serves five counties in northern Kentucky; the KHIE which is currently in pilot and will provide statewide HIE; and the Northeast Kentucky RHIO which initially will serve 17 counties and likely expand to include other counties.

### **2. ONC Mandated Benchmarks:**

- 85 percent of community pharmacies accept electronic prescribing and refill requests
- 70 percent of the ten clinical laboratories (which account for 88% of Medicaid payments for labs) surveyed send results electronically
- 100 percent of health plans support eligibility and claims transactions
- Percentage of the 56 public health departments receiving immunizations, syndromic surveillance, and notifiable laboratory results are as follows:
  - Syndromic Surveillance:
    - 2 percent receive syndromic reports electronically from hospital information systems (i.e., messaging)
    - 80 percent receive syndromic reports from hospitals entered into a web-based reporting system.
  - Laboratory Reporting:
    - 5 percent receive electronic lab reports from hospital information systems
    - 100 percent receive lab results entered into a web-based reporting system
  - Immunization Reporting:
    - 3.5 percent receive immunization data electronically

### ***Also of Note:***

- Less than one percent of hospitals have the current capacity to electronically exchange health information across unaffiliated networks to meet meaningful use requirements

Discussion: There are 101 acute care hospitals that are not government owned, 29 of which are designated as critical access hospitals (CAH), and one free-standing long-term acute care hospital (LTACH). While most hospitals have some level of technology, most do not have electronic clinical records. Many of the systems found in hospitals are not only unable to communicate with other healthcare systems but also are unable to communicate with



other systems within their hospital. Most hospitals also have limited IT support. Statewide, less than one percent (1%) of hospitals has the capacity to electronically exchange health information to the extent required to support meaningful use. Some of the larger hospitals have limited capacity to exchange data between other hospitals in their “networks” and with select physician practices that already have EHRs using Relay Health as the exchange broker, but most lack CCHIT certified EHRs.

**3. Physician adoption rates vary widely; surveys show increasing rates of adoption but the rate of adoption in most areas of the state is still low.**

Discussion: Barriers to adoption include: financial barriers; uncertainty about where and how to obtain funding (including questions about how the Incentive Payments Program will operate), concern about loss of productivity; lack of technical support within the practice; fear about making a wrong and costly decision; lack of expertise and time in the practice to guide the selection and implementation, etc. Compounding the problem is the lack of adequate technical support in the practice and the community.

**4. Two Regional Extension Centers will support provider adoption statewide.**

Discussion: In the first months of operation, the RECs are focusing on identifying early adopters who will facilitate access and support other clinicians. During the first two years of implementation, the RECs will focus on primary care providers with the goal of serving from 60-70 percent of them. After this period, the RECs plan to address the needs of other providers. The RECs also have applied for funding to support critical access hospitals in adoption and meaningful use. In addition to a group purchasing plan, the RECs are using tools kits developed by the Doctor's Office Quality Information Technology (DOQ-IT) grant program, which is being tailored to meet the needs of various provider groups, such as the Federally Qualified Health Centers, CME programs, use of telehealth, and other strategies are under development.

**5. Health care is local. All healthcare providers and organizations need to adopt EHRs and engage in HIE if we intend to realize improved care coordination, healthcare outcomes, and population health.**

Discussion: In order to realize the full benefits of health IT (HIT) and electronic exchange of health information (HIE) and the desired improvements in care coordination, health outcomes, and improved population health, it is essential that the broad array of health care providers and organizations adopt HIT and participate in HIE, not just those designated as eligible providers or organizations for purposes of the Medicare/Medicaid Incentives Program. This group includes physicians who do not meet the Medicare/Medicaid practice thresholds and nursing homes, rehabilitation facilities, behavioral health providers, and an array of home and community-based healthcare providers, etc. It is important that the needs of these non-eligible providers and organizations be identified and the feasibility of services similar to those offered by the RECs be explored, including group purchasing programs for EHRs.

**6. One size does not fit all and just because a vendor's system is certified does not mean that the clinician will achieve meaningful use.**

Discussion: Each physician practices differently—including physicians in group practices. A standard template does not address the differences. Implementation is a process, which can be thought of as roadmap of action steps and milestones that begins prior to selection and focuses heavily on workflow redesign. Implementation must be coordinated to ensure that the vendor's plan corresponds to the practice's capacities and needs. There is a body of evidence-based practices that should be used to support the implementation process. This information must be readily available to physicians and practice managers and the vendors and other entities that will support implementation. To expedite HIE, interim options should be available such as EMR "lite" or a provider portal to a virtual health record with functionality to support meaningful use to facilitate use and support transition to a full EMR.

**7. Hospital participation in HIE, especially among the larger hospitals and regional medical centers, is critical and can serve as a catalyst to spur adoption and HIE among smaller community hospitals and physicians.**

Discussion: Many physicians look to the hospital to lead the way. The CMS DOQ-IT project reported that 40 percent of the 81 physician practices served in Kentucky, did not move forward with an EHR because they were looking to the hospital to see what it would do. The larger hospitals and regional medical centers that have successfully implemented EHRs can be an important source of support for other hospitals in their organizations and their provider affiliates. They can also be a source of support for other non-affiliated community hospitals if they set aside competition.

**8. IT support is critical.**

Discussion: Throughout implementation, it is important to continuously monitor the availability of local/regional IT support and report these findings to the Council on Postsecondary Education and the Kentucky College and Technical College System (KCTCS) and to state and local manpower planning officials responsible for federally-funded employment and training programs. A representative from higher education serves on the KHIE Coordinating Council.

Additionally, the KCTCS is a member of a 13-state regional consortium of 21 community colleges that received ARRA funding to build the capacity of health IT health professionals. The effort is being led by North Carolina-based Pitt Community College. During statewide rollout it is critical that these efforts be linked to the work of the RECs and other groups that will be providing on-the-ground support.

**9. Bandwidth is a critical concern, especially in the rural areas.**

Discussion: A representative from the Commonwealth Office of Technology (COT) serves on the KHIE Coordinating Council. He will assist the Provider Adoption & Meaningful Use Committee in reviewing the findings from a statewide mapping project that is expected to be released in September 2010 to identify potential gaps and service needs and keep the Committee and Council abreast of broadband issues and opportunities.

## **10. Trust is paramount to provider and patient confidence in HIE.**

Discussion: Communication, transparency, and accountability are essential to building trust among patients and providers and securing participation in HIE. The implementation of effective communication strategies targeted to the interests and needs of stakeholders must be a priority. Providers need accurate and timely information; how to access services; and need to know where they can go for more information. They must have a basic understanding of HIE and the ways in which it will benefit their practices; and, how it maintains privacy and security.

### **A.2—STATE LEADERSHIP FOR HEALTH INFORMATION EXCHANGE AND STATE HIT COORDINATOR**

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Governor Steve Beshear issued an Executive Order on August 14, 2009 creating the Governor's Office of Electronic Health Information (GOEHI) within the Cabinet for Health and Family Services (CHFS). Ms. Janie Miller serves as the Secretary for CHFS. Under Ms. Miller's leadership, the pilot of the KHIE was launched. She served as the acting State Health IT Coordinator until an Executive Director in GOEHI was named in May 2010. Secretary Miller brings more than 30 years of experience to her position including 21 years developing and administering health care programs. She was instrumental in the co-development of the Medicaid KenPac program (the recipient of a national innovative award for primary care management for Medicaid recipients). Ms. Miller served as Public Protection Cabinet Secretary from May 2002 to November 2003, continuing in the role of Commissioner of the Kentucky Department of Insurance while serving as Cabinet Secretary. An organizational chart of the CHFS depicting all departments and offices is included in Appendix C.

Mr. Jeff Brady was appointed to the position of Executive Director of GOEHI in May 2010. He has over 35 years of experience in developing and administering health IT and until his retirement a year ago, served as chief information officer of Appalachian Regional Healthcare (ARH). The not-for-profit health system operates nine hospitals, clinics, home health agencies, HomeCare Stores and retail pharmacies in southeastern Kentucky and West Virginia. In addition to serving as GOEHI Executive Director, Mr. Brady is the designated State HIT Coordinator. His responsibilities include:

- Chairing the 23-member KHIE Coordinating Council and provide staff support to the Council's six committees
- Directing the operation of GOEHI
- Providing Cabinet-level leadership on HIE issues and coordinating the participation of other CHFS agencies
- Coordinating the participation of other state agency programs in HIE
- Serving as the single point of contact for HIE matters in the Commonwealth
- Coordinating strategic and operational planning for HIE
- Executing the Kentucky Strategic and Operational Plan for HIE, to include monitoring, remediating, and reporting functions
- Overseeing business development; leading stakeholders in planning for sustainability
- Implementing policies and procedures for privacy and security

- Advocating for vulnerable populations, assuring representation of their needs and interests throughout the planning process and during implementation/operation of the KHIE
- Assuring transparency and accountability through open-process, to include performance reporting, communications, and collaboration with stakeholders to ensure the public interest is always first and foremost
- Managing the State HIE Cooperative Agreement
- Coordinating with the ONC and other Federal Agencies to assure alignment with the national roadmap for HIT and HIE and connectivity to the NHIN
- Collaborating with State HIT Coordinators from contiguous states to plan and execute HIE across state borders
- Communicating with the public and other stakeholders to build awareness, trust, and support for HIE
- Facilitating stakeholder input and participation
- Conducting program evaluation and coordinating continuous quality improvement
- Providing business support and technical assistance at the regional level

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### A.2.1—DEPARTMENT FOR MEDICAID SERVICES

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Development of the KHIE is supported by a \$4.9 million Medicaid Transformation Grant awarded to the Department for Medicaid Services. The technical infrastructure for the KHIE is being built under the supervision of Kathy Frye, CHFS Deputy Executive Director of the Office of Administrative and Technology Services and CHFS CIO. Sandeep Kapoor serves as the Chief Technical Architect of the Cabinet for Health and Family Services. The Commissioner for the Department for Medicaid Services, Elizabeth Johnson, is actively involved in the administration and operation of the KHIE and serves as a member of the KHIE Coordinating Council.

The development of the State Medicaid Health Information Plan (SMHP) is being closely coordinated with the Kentucky Strategic and Operational Plan for HIE. (A detailed description is included in the Work Plan under Goal 3.0, which can be found in B.1.2.1 of the Operational Plan.) Findings from the SMHP will inform the annual update of the State HIE Plan in December 2010-January 2011.

The Kentucky Medicaid Program serves nearly 800,000 beneficiaries. The KHIE architecture is based on CCHIT HIE standards, is built upon Service Oriented Architecture, and aligns with the MITA 2.0 framework. Medicaid claims data for the preceding two years are loaded into a data repository, which can be accessed by providers through the KHIE as a continuity of care document (CCD). The repository is updated every 24-hours.

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### A.2.2—OFFICE OF ADMINISTRATIVE AND TECHNOLOGY SERVICES (OATS)

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OATS, under the direction of Executive Director Frank Lassiter, provides leadership and oversight for all CHFS technology, including the operation and management of the KHIE. Mr. Lassiter and Ms. Frye are responsible for the mitigation of risks and technical assurance of privacy and security. Mr. Lassiter and Ms. Frye are members of the KHIE Coordinating Council. The placement of

responsibility for all CHFS technology has the added benefit of allowing Ms. Frye to identify and plan for interoperability and connectivity to the KHIE as existing health-related systems are modified and new systems developed.

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### A.2.3—DEPARTMENT FOR PUBLIC HEALTH (DPH)

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The Kentucky DPH is a key stakeholder in HIE and its Commissioner Dr. William Hacker is a member of the KHIE Coordinating Council. Dr. Hacker also serves on a number of national public health committees and HIE workgroups, including serving as Chair of the Association of State and Territorial Health Officials (ASTHO) E-Health Policy Committee.

In addition to the development of laboratory capacity to support meaningful use, DPH has taken steps to develop the capacity for bi-directional exchange between the State Immunization Registry and the KHIE. Efforts are also underway to secure CDC funding to develop the interoperability required to support syndromic surveillance reporting using the KHIE as the platform for bi-directional exchange between the state public health laboratory, the Division of Epidemiology's disease surveillance module, and the National Public Health Information Network (NPHIN).

DPH partnered with GOEHI and the Lexington-Fayette County Health Department to develop a proposal for the Beacon Community Grants program to capitalize on Fayette County's high rate of adoption (40 percent) and readiness for HIE. The scope of work proposed that diabetes program staff from the local health department would assist physicians in the care of patients covered by the Medicaid program who have diabetes by providing patient self-management support and facilitating access to an array of community-based supports and services. The delivery of these services, coupled with the functionality of the KHIE would support physicians in the implementation of the Chronic Care Model and serve as a model in demonstrating the value of HIE in primary care. Although the proposal was not funded in the first round of competition, CHFS resubmitted a proposal in round two of the Beacon Community Grants. The DPH remains steadfast in its desire to support community primary care providers in the implementation of the Patient-Centered Chronic Care Model and the use of HIE.

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### A.2.4—ACADEMIC SUPPORT

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In addition to an administratively designated position on the KHIE Coordinating Council, representatives from state universities occupy several other seats on the KHIE Coordinating Council and serve on a number of Committees. Additionally, the state's two university medical centers (University of Kentucky and University of Louisville) are participating in the KHIE pilot and the evaluation of the Medicaid Transformation Grant is being carried out by a third state university (Northern Kentucky University).

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### A.2.5—COORDINATION OF MEDICARE AND FEDERALLY FUNDED, STATE BASED PROGRAMS

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A number of federally funded, state-based programs fall under the jurisdiction of the DPH, including the Ryan White HIV funding, and Maternal Child Health programs (including newborn screening programs) as well as a number of CDC funded programs in epidemiology, infectious disease surveillance and control, and chronic disease prevention. The Commission for Children with Special Health Care Needs, which is the State Title V Program for Children with Special Needs, also is an administrative unit of the CHFS. Oversight for the technology to support these programs is tasked to OATS.

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### A.2.6—PARTICIPATION WITH FEDERAL CARE DELIVERY ORGANIZATIONS

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A member of the KHIE Coordinating Council (and Chair of the Provider Adoption and Meaningful Use Committee) is a chief executive officer of a Federally Qualified Health Center (FQHC); serves as Vice Chair of the Kentucky Primary Care Association (KPCA); and, acts as a liaison between the KPCA and the state's FQHCs. The Assistant-Director of the State Rural Health Center also serves on the KHIE Coordinating Council.

During statewide rollout of the HIE, as part of the regional outreach strategy GOEHI staff will contact the Veterans Medical Centers, outpatient clinics, and community-based clinics as well as to the state's two military base hospitals at Fort Campbell and Fort Knox to discuss connectivity and participation in HIE. From previous contact with a VA community based clinic during development of the Beacon Grant application, there was considerable interest in connectivity to the HIE particularly as it relates to homeless veterans who often seek care through safety net providers and hospital emergency departments.

Kentucky does not have an Indian Health Services program.

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### A.2.7—COORDINATION WITH OTHER ARRA PROGRAMS

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As previously discussed, GOEHI is closely coordinating and collaborating with the state's two RECs. A number of action steps specific to coordination of efforts are identified in the Work Plan that is a part of the State Operational Plan. Each of the two RECs also has a representative who serves on the KHIE Coordinating Council.

The state broadband coordinator responsible for ARRA funded broadband initiatives serves on the KHIE Coordinating Council. Action steps related to broadband mapping and access are identified in the Work plan.

## B.1—DOMAIN REQUIREMENTS

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### B.1.1—GOVERNANCE

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**Collaborative Governance Model:** The KHIE Coordinating Council was established by Secretary Janie Miller to serve in an advisory capacity to CHFS. The Chair of the KHIE Coordinating Council is the Executive Director of GOEHI. The 23-member body is appointed by the CHFS Secretary to terms of two years, which can be renewed once. The Council has six committees—the members of which also are appointed by the Secretary for a term of two years (one-time renewal). The committees, each of which has from six to ten members are: Accountability and Transparency Committee; Business Development and Finance Committee; Interoperability and Standards Development Committee; Provider Adoption and Meaningful Use Committee; Privacy and Security Committee; and Population Health Committee.

The membership of the KHIE Coordinating Council is as follows:

**Ex-Officio:**

- Executive Director of GOEHI (serves as Council Chair)
- Commissioners of the Departments for Medicaid Services, Public Health, and Behavioral Health, Developmental Disabilities
- Chief Information Officer of the CHFS
- Executive Director of the Office of Administrative and Technology Services
- Finance and Administration Cabinet (Commonwealth Office of Technology) Broadband Coordinator

**Membership appointed by the CHFS Secretary:**

- One representative from the Kentucky Hospital Association
- One representative from the Kentucky Medical Association
- One representative from a RHIO
- One representative from each of the State's Regional Extension Center Grantees
- One representative from a health care payor
- One representative from the Kentucky Pharmacy Association
- One representative from a state university in the Commonwealth
- A privacy and security expert (Can self-nominate)
- A consumer representative (Can self-nominate)
- Committee Chairs (6)

Council and committee members represent a broad cross-section of HIE stakeholders; come from across the Commonwealth; and represent a diverse array of interests. Each Committee operates under a charter that specifies the scope of work and deliverables (subject to a timeframe). The charters are revised at least one time annually in conjunction with the development of the updated Kentucky Strategic and Operational Plan for HIE. (Copies of the current charters are included in Appendix D through I as an item in the Committee Recommendations Report for each Committee.)



The role of the committees is to study issues identified by the Chair and the Council and present findings and recommendations to the Council for review, comment, and acceptance/adoption. The committees may also be asked to assist the GOEHI staff in the development of plans (for example, a communications plan which has been tasked to the Accountability and Transparency Committee). One or more GOEHI and/or OATS staff is assigned to administratively assist each committee. (The Department for Public Health assigns staff to the Population Health Committee.)

Council recommendations are forwarded to the CHFS Secretary for review and consideration when appropriate. The process provides an open-channel of communication between the Secretary, GOEHI, and the stakeholders. It also provides a forum for stakeholders to engage in informed dialogue—and sometimes debate—and arrive at decisions through consensus.

All Council and Committee meetings are open meetings. A calendar is maintained on the GOEHI website with contact information for guests who wish to use teleconferencing to listen-in to meetings.

**State Government HIT Coordinator:** As described in Section 2.0, the Executive Director of GOEHI, which is the State Designated Entity for HIE, will serve as the State Government HIT Coordinator. The Executive Director functions at a level commensurate with that of the State's Commissioners of Medicaid, Public Health and Behavioral Health. (A CHFS Organizational Chart is included in Appendix C.) He reports to the Secretary of the CHFS, which is the administrative home of the State Medicaid, Public Health, Behavioral Health, Health Policy (Certificate of Need), Aging Services, Commission for Children with Special Needs, Community Based Services; and, the Office of the Inspector General, which is responsible for healthcare licensing and regulation.

The Executive Director serves as Chair of the KHIE Coordinating Council; is responsible for coordination with the ONC and other Federal Agencies to assure alignment with the national roadmap for HIT and HIE and connectivity to the NHIN; and, will collaborate with State HIT Coordinators from contiguous states to plan and execute HIE across state borders.

**Accountability and Transparency:** Trust in the KHIE's ability to protect the privacy and security of patient information will be the key to the KHIE's success, and communicating the value and benefits to be gained through health information exchange is critical. Similarly, consumers and clinicians must be assured that the public's interest is respected and effective governance and accountability are in place.

As a state government agency, all KHIE Coordinating Council and Committee meetings are open to the public. Meeting notices are posted to the GOEHI website and included in regularly scheduled open meetings notices distributed to media outlets by the Cabinet's Office of Communications. As they are developed, policies and procedures, technical specifications, and other related information that is not proprietary or compromising to privacy and security will be posted on the GOEHI website. Other communication strategies including the use of Gov.Delivery to send out regularly scheduled program announcements and updates are described in greater detail in the Operational Plan.

The Accountability and Transparency Committee has been dually tasked with assisting GOEHI in developing a plan to communicate the value of KHIE and collecting and disseminating information about the effectiveness of the KHIE from stakeholders through routine reporting on process and performance measures. Subcommittee members employed a three-step process to identify stakeholder groups and align each group to potential communication methods. Stakeholder groups were identified and then prioritized at two levels, “High” and “Medium” priority, in terms of the immediacy of the group’s need for information about health information exchange and the KHIE. No stakeholder groups were identified as a low priority. Viable communication methods were identified and mapped to the stakeholders for whom the committee believed that the methods would be effective. For each stakeholder group, a primary and secondary method of communication was identified as well as other methods that are of potential use. Potential venues and/or strategies were identified next for each of the stakeholder groups. This will form the basis for a comprehensive communications plan that is slated for development later this year. (A description of its development is included in the Operational Plan, which follows.)

The Committee identified the following stakeholder groups as being high priority for receiving education and information on an ongoing basis through a concerted approach using multiple methods that sustains interest, communicates value, and provides avenues for obtaining additional information and/or support when appropriate.

- Healthcare providers: Hospitals, clinics, physicians and other healthcare providers
- Payers, health plans and other purchasers of health insurance
- Healthcare Information Exchanges
- Governmental entities and agencies
- Patients and consumers
- Health professional schools, universities and colleges
- Health information technology vendors

Following Committee and Council recommendations, GOEHI will use surveys to obtain stakeholder input through a feedback loop that reinforces and builds on previous survey findings. Surveys will be used throughout the implementation of the KHIE and thereafter to obtain user feedback, identify and mitigate risks as they arise, document the use and efficacy of the KHIE, and identify the perceived value of the KHIE among users.

The Accountability and Transparency Committee will advise and assist the KHIE Coordinating Council and GOEHI to develop performance measures, which will be routinely reported on the GOEHI website. Additionally, GOEHI will convene an advisory group to evaluate improvement of clinical outcomes for patients, including the impact of provider use of the KHIE on selected diagnoses by measuring clinical outcomes for 5 of the 10 most prevalent disease conditions in Kentucky.

An integrated plan and timeline will be developed to guide implementation, and reporting of surveys to capture adoption, meaningful use, and other performance measures for the State HIE Cooperative Agreement, which are being developed in conjunction with the State Medicaid Health Information Technology Plan (SMHP) and the evaluation of the Medicaid Transformation Grant.

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## B.1.2—FINANCE

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**Sustainability:** GOEHI and the KHIE Coordinating Council recognize the importance and challenges of developing a sustainable health information exchange capability. The primary focus of sustainability should be on sustaining information sharing efforts, and not necessarily the persistence of government sponsored health information exchange entities. The value of HIE for its stakeholders must be established and supported by a sound business model. Attention to the business aspects of HIE should not be to the detriment of the value proposition.

For the initial submittal of the Strategic Plan, the intent is to describe the Council's initial thoughts for sustaining HIE activities during and after the cooperative agreement period. The Business Development and Finance Committee has been dually tasked with assisting GOEHI in developing a plan that includes options for sustainability and potential public/private financing mechanisms to support HIE governance and operations beyond ARRA funding. To ascertain the best options for sustainability, these key questions are driving the Committee's work:

1. What is the appropriate governance model for sustainability?
  - Collaborative
  - Public Utility
2. What are the funding sources and what is the demand and timing?
3. What is the cost structure for the KHIE?
4. What are the special issues in bringing the KHIE to non-urban areas and underserved populations?

The approach and methodology being employed by the Committee consists of the following action steps:

1. Review approved plans
2. Review reports and studies on HIE sustainability
3. Examine barriers to adoption/diffusion
4. Engage experts through committee interviews
5. Identify value propositions by stakeholder
6. Turn value propositions into "Value Equations"
7. Engage stakeholders for validation and refinement
8. Determine product mix and timing
9. Develop pro forma models

A discussion of the findings that have emerged from the Committee's work to-date follows;

### Finding: Market Opportunity and Potential Beneficiaries

The characteristics of the product market for HIE services is complex and evolving; the types of services that might be provided as value added services are varied and cut across stakeholder groups.

- The geographic market for the KHIE is the political boundaries of the Commonwealth. The KHIE will provide interconnectivity and services to support the achievement of “meaningful use” to all providers, organizations and institutions. The characteristics of the product market for HIE services is complex and evolving. While service characteristics will largely be defined by the developing ONC definitions of “meaningful use,” the types of value-added services that can be used as revenue sources are varied and cut-across stakeholder groups.
- The HIE market is evolving, in a large part based upon EHR incentive payments and meaningful use timelines tied to CMS reimbursement. In addition to the KHIE, there are existing RHIOs (HealthBridge, LouHIE, and NEKY RHIO) and hospital system enterprise HIEs. Privacy and security issues will also shape the characteristics of service offerings. Thus, the market opportunity must be ascertained within this larger framework.
- The population, clinicians and other beneficiaries will be identified and measured through collaboration with the Provider Adoption and Meaningful Use Committee and through the stakeholder value proposition process.
- The Medicaid Transformation Grant (MTG) is providing a connection of seven locations and provides a foundation for analyzing the market opportunity. An assessment of the MTG is in process. This assessment focuses on three areas: adoption, clinical outcomes and economic outcomes. An interim report is due in October, and a final report is due in March.
- The KHIE offers three levels of service; Silver, Gold and Platinum membership. This is equivalent to the ability to pull data, push data, and cross enterprise data sharing. This parallels the consensus in the research studies and other state plans that services will initially consist of a transaction model evolving into the HIE being a clinical data and information intermediary.
- ONC HIE Stage 1 meaningful use requirements will be met during 2011:
  - E-Prescribing
  - Receipt of structured lab results
  - Sharing patient care summaries across unaffiliated organizations
- In terms of the potential beneficiaries, the BD&F Committee is using the stakeholder framework established by the Accountability and Transparency Committee. Value propositions are being established for each of the stakeholder groups.

### Findings: Drivers

A revenue model that is supported across stakeholder groups with payments proportional to the value they receive from the HIE provides the best path to sustainability.

- The KHIE, which provides a common, secure electronic information infrastructure for sharing health information across healthcare providers and organizations, is being designed according to national standards to ensure interoperability across disparate health records

systems and connectivity to the National Health Information Network (NHIN). The system affords healthcare providers the functionality to support preventative health and disease management through alerts, messaging, and other tools.

- The KHIE will provide a baseline set of functions available across the state, a shared technology infrastructure to support exchange, and promote interoperability among disparate health systems. The KHIE will include interfaces to support data exchange with health care facility systems including electronic prescribing, admission/discharge/transfer (ADT) systems, continuity of care document (CCD) systems, laboratory systems, images, scanned documents, medication histories, allergies and diagnoses, health alerts, etc. It will also provide standardized HL7 messaging, file exchange, web interfaces, support connection to the NHIN, and incorporate national HIE and health information technology (HIT) standards to realize interoperability to its fullest extent. The core components of the KHIE will include a master patient/person index, record locator service, security, provider/user authentication, logging, audits, and alerts.
- The services and functionality provided by KHIE will be phased in over time. Initial functionality parallels the membership levels. ONC stage 1 meaningful use requirements will be met in 2011.
- In terms of revenue sources, at this stage, the ONC requires preliminary but realistic ideas on who will pay for services and under what mechanism. By undertaking an assessment of the value propositions associated with Stakeholder groups, preliminary revenue models can be identified.
- A preliminary assessment suggests that a revenue model that is supported across stakeholder groups with payment proportional to the value they receive from the HIE provides the best path to sustainability. Enhanced services and value-added functionality can be added to the core HIE services as the infrastructure and user demand mature. Commercialization of data for analytics and clinical trials is an additional revenue source.

#### Findings: Revenue Mix

There are a number of potential revenue sources that could be applied to the costs of KHIE. The possible revenue mix includes:

- Payor allocation proportional to their covered base
- Subscription fees or membership dues to data users
- Subscription fees or membership dues to data providers
- Advertising or marketing
- Fees generated from clinical trials
- Utility Model- fees assessed through state for public service
- One-time financial contribution to the health information exchange (donation, etc.)
- Commercialization of data analytics
- Clinical Trials

- Government Grants (ARRA, Medicaid Transformation Grant, Beacon Grant)
- Funding recommendations from the Executive and/or Legislative Branches of the State Government

Cost estimates for the KHIE will be established by extrapolating from the Medicaid Transformation Grant project and the utilization of comparables with existing and planned HIEs.

#### Findings: Principal Risk Factors

A comprehensive plan should be developed to address the potential for risk, including (but not limited to): an evolving market; a complex set of drivers related to demographics, economics, healthcare infrastructure, public health, and workforce elasticity; Kentucky end users; timing of cash flow; and technical risk.

- The health information exchange market is dynamic and evolving. The market structure will be defined by the KHIE, hospital system enterprise HIEs, and RHIOs.
- As a network entity, HIEs have many characteristics of a natural monopoly, suggesting a public utility model. Unlike most public utilities, the value of HIEs accrues to diverse and sometimes competitive stakeholder groups. HIE value is complex to measure and in some cases does not begin to accrue until a critical mass is achieved. Further, privacy and trust factors are major constraints to both HIE adoption and the variety of application offerings.
- The Commonwealth consists of a complex mix relative to demographics, regional economics, healthcare infrastructure, public health, and workforce. A comprehensive plan must be developed and coordinated that addresses these issues.
- Price point estimates may be ascertained from existing HIEs, but the elasticity of demand by end-users is unclear and is subject to the network effects of a minimal efficient scale relative to the number of users. As the network evolves, the pricing of services will be supported by economies of scale, resulting in lower costs and pricing flexibility over time.
- The timing of cash flows: during the initial rollout phase of the KHIE, capital will be required for infrastructure build-out, application development and marketing.
- Cost risks: As with any start-up, there are risks associated with unknowns and unanticipated costs.
- Technical risks: Network and database functionality provide risks relative to the timing of demand, services, and cash flows.

#### Findings: Review of State Plans, Established HIEs and Research Literature

The one consistent finding is that there is no “silver bullet” for HIE sustainability and that revenues are typically generated from a variety of services. The objective is to identify relative financial measures that can be associated with stakeholder value propositions as well as identifying the

range of services that can be provided by HIEs. A summary of three of the state plans reviewed follows:

**New Mexico**-- Health plans suggested that we create some new scenarios that would show what it would cost the health plans if they were to assume the entire cost of supporting NMHIC. They explained that if we charged the hospitals, the cost would only be passed on to the health plans anyway; and if we charged the users, it might discourage rapid clinician adoption. The new scenarios were created, distributing the annual cost to each of the health plans based on a single rate per member per month. Before New Mexico can create new scenarios for ongoing sustainability for the New Mexico HIE Plan, several new areas of expenditures and funding opportunities will need to be better defined.

**Utah**—UHIN intends to continue with the same business approach to exchange clinical information through the cHIE. UHIN has spent the last 2 years working intensely with three stakeholder groups – clinicians, hospitals and payers, including Medicaid and the state Public Employees Health Plans– to build a sustainable business case for the cHIE. During 2009-2013, UHIN will fully develop then test the proposed cHIE business case with a fee/price structure among all cHIE participating organizations. Negotiation, revision, and compromise will be part of the expected normal process to build a consensus-based business case for cHIE. If it is successful, it is our goal that by 2012, UHIN will not depend upon federal funds to support the core services of the cHIE.

**Maryland**—Subscription & Transaction Fee Driven. Key is a series of assumptions about the fees that various participants are willing to pay for services offered through the statewide HIE, and how fast those services could be deployed and subsequently adopted by the user community.

In terms of discussions with established HIEs, HealthBridge (HB) held a conference call with the Committee on June 11, 2010. HB primarily uses a subscription model and advises strongly against using a transaction model. Subscription fees run between \$2,000 and \$34,000 per month. The maximum charge for physician practices is \$300 per month (\$30 for a single practitioner practice). The \$34,000 is for a multi-billion dollar revenue per year institution. Payment levels are negotiated individually. HB's cost per message is 12 cents, while national averages approach 25 cents. HB has launched a pilot program with a larger payor focused on patient management.

Discussions with other RHIOs in the Commonwealth are in the process of being scheduled. In addition, a discussion with the Indiana Health Information Exchange (IHIE) is also in process. Of particular interest to the Committee is the product mix that IHIE provides. Outreach and discussions with successful HIEs in other states and regions of the country are also in process.

The Committee determined that RHIOs and hospital enterprise HIEs are complimentary to the KHIE and represent extenders of interoperability, connectivity, and services. The master patient index, record locator, and functionality of the federated database are the differentiators of the KHIE.

#### Future deliverables:

The Committee will continue to work on the established deliverables:



- The BD&F Committee is requesting direction from the KHIE Coordinating Council on pursuing the sustainability analyses and the process of engagement of stakeholders
- Pro Forma Budget
- Benefits and Value Propositions and Value Equations
- Product Mix and Revenue Options

### Stakeholder Value Propositions

The Committee is establishing draft value propositions for each of the stakeholder groups identified by the Accountability and Transparency Committee. The next steps in determination of the accrued benefits and value are:

- Harmonize these value propositions with those identified with other committees
- Discuss the value proposition with each stakeholder group for the purposes of validation and refinement
- Establish a value equation in the form of an estimated dollar range for the value propositions through discussions with stakeholders, research studies and white papers, comparables and primary research

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### B.1.3—TECHNICAL INFRASTRUCTURE

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GOEHI, in collaboration with the Department for Medicaid Services and the Office of the Administrative and Technology Services, launched the Kentucky Health Information Exchange (KHIE) in April 2010. The KHIE, which is under development with funding from a Medicaid Transformation Grant, is being piloted among six hospital systems and one clinic. The KHIE provides a baseline set of functions, provides a shared technology infrastructure to support exchange, and promotes interoperability among disparate health systems. In addition, it provides connectivity to the state's regional health information organizations (which currently are HealthBridge serving Northern Kentucky and the Northeast Kentucky RHIO) and the National Health Information Network (NHIN). The KHIE is not intended to supplant the existing RHIOs or any that may be developed. The choice as to which HIE provider to use will be left up to the clinicians and healthcare organizations to decide. The intent of the KHIE is to assure that Kentucky's providers have access to at least one option for use in meeting stage 1 meaningful use requirements.

As outlined in the July 6, 2010 Program Information Notice from ONC, it is critical that the KHIE be developed in a way that that allows providers to rapidly achieve stage 1 meaningful use requirements. In determining the gaps that exist between the current KHIE technical infrastructure and the capabilities of providers and hospital across Kentucky to exchange clinical data, it became apparent that the KHIE needed to develop an alternate method of connection.

In addition to the current Continuity of Care Document (CCD) method of connection, the KHIE is pursuing a way for hospitals and providers who do not have the capabilities to exchange data in a CCD format to send standard HL7 ADT, Laboratory, and Transcription transactions to an edge

server that is accessed from the KHIE. The data contained in the edge server would belong to the provider or hospital.

The KHIE would then be able to offer both methods of connection – the CCD via secure web service federated model and the edge server via HL7 2.x over VPN model. In the edge server model where CCD format is not directly supported, a clinician can still access the CCD via a provider portal to a virtual health record. This enables the clinician, whether hospital or community-based, to view a patient care summary. This summary record would contain clinical data from all organizations connected to the KHIE. It would allow for receipt of structured lab results and would have e-Prescribing capabilities.

This hybrid framework includes interfaces to support health data exchange but is vendor and technology agnostic with the focus on enabling optimal connectivity and interoperability. The core components of the statewide KHIE include: a master patient/person index; record locator service; security; provider/user authentication; logging and audits; and alerts. The system supports electronic prescribing, the exchange of patient demographics, laboratory and image reports, past medical diagnoses, dates of service, hospital stays, immunization data, and provider portals. (Patient portals will be added later.) The KHIE also provides clinical guidelines/rules for chronic disease management for diabetes, asthma, cardiovascular disease, childhood and adult immunizations, etc. (Please refer to the Appendix J for a descriptive diagram of the KHIE.)

The KHIE architecture will support meaningful use and align with the standards around which EHRs are being built, is built upon Service Oriented Architecture, and aligns with MITA 2.0 framework. Information exchange is accomplished via web services and has the capability to push or pull data using CCHIT standard messaging.

The KHIE has identified three levels of connectivity for hospitals and providers who have CCD capabilities. At the silver level, a CCD will be pulled from the KHIE by the participant. The gold level allows for a push and pull of the CCD and the platinum level uses the XDS repository. The following tables outline the formats used for the KHIE exchange and the codes sets used in the KHIE.

<b>Table C.1</b>	
<b>KHIE Exchange Formats</b>	
<b>Format</b>	<b>Description</b>
<b>HL7 CCD</b> <i>(Continuity of Care Document)</i>	The CCD is a CCHIT certifiable format for exchanging an electronic patient health record.
<b>IHE - XDS</b>	Cross-Enterprise Document Sharing (XDS) is focused on providing a standards-based specification for managing the sharing of documents between any healthcare enterprise, ranging from a private physician office to a clinic to an acute care in-patient facility and personal health record systems
<b>Eligibility Data – ASC X12N 270/271</b>	Eligibility Inquiry and Response
<b>Claims Data – ASC X12N 837I,</b>	Medical Claims Submission

<b>P, D</b>	
<b>RX Claims Data – NCPDP5.1</b>	Pharmacy Claims Submission and Response
<b>e-prescribing Data – NCPDPScript8.1</b>	e-prescribing; refill request, refill response; RX cancel messages, eligibility queries; formulary inquiry and response; RX history queries and Response
<b>HL7 version 2.5, 2.3.1</b>	Lab order and response, scheduling, clinical ordering; referrals, clinical data exchange
<b>HL7 Registration, Admit Discharge</b>	HL& Patient Registration Message, Hospital Admit, Hospital Discharge Information
<b>HL7 2.x</b>	Immunization and reportable disease surveillance
<b>KHIE Code Sets</b>	
<b>Format</b>	<b>Description</b>
<b>ICD-9 CM Codes</b>	International Classification of Disease
<b>CPT/HCPCS Codes</b>	Common Procedure Terminology
<b>CDT Codes</b>	Common Dental Terminology
<b>UB04 Revenue Codes</b>	For Hospital procedures
<b>SNOMED</b>	Systematized Nomenclature of Medicine (SNOWMED) for Patient History information
<b>NDC</b>	National Drug Codes
<b>LOINC</b>	Logical observation identifiers names and code, lab ordering and results exchange

The functionality of the KHIE is intended to satisfy the final definition of meaningful use including: provider portal; patient portal; CCD; public health reporting using standard HL7 messages; capability to report electronically the outcome measures including public health reporting e-prescribing; capability to interface with the state owned and private labs; connection to the NHIN; six clinical rules will be included on the initial roll out; and, standards based interfaces. Additionally, the KHIE framework will support clinical quality reporting to Medicare and Medicaid.

In addition to the CCD method of connectivity, CHFS and its vendor ACS have agreed to offer an alternate method of connectivity. The Commonwealth's vendor is providing an edge server connection, and an EMR-Lite and provider portal to a virtual health record to those providers and hospitals that choose not to connect through the CCD. This will allow for rapid implementation and a timely solution that combines the capabilities of both systems to accelerate the project trajectory and provide a range of robust connectivity options to connect and begin using the KHIE to meet stage 1 meaningful use.

The EMR-Lite will be available to providers at no cost and is intended to serve as a bridge to the provider's purchase of an EHR system. It will supply the functionality to support stage 1 meaningful use.

Development of the KHIE is being completed in three stages. By the completion of phase 1 on October 30, 2010, the implementation of the edge server exchange framework will be completed. This framework will include the Master Patient Index and Record Locator Service, will provide connectivity to the pilot hospitals, state public health laboratory, and one private lab. The functionality provided to the pilot sites on October 30 will include: Exchange/Clinical Messaging;

EMR-Lite; I-Hub; e-order (laboratory order/response); e-prescribing; and a provider portal to a virtual health record. Continuity of Care Document (CCD) connectivity with the Medicaid environment will be available through the Provider Portal. The system will be supported by a Clinical Rules Engine. The pilot hospitals desiring to do, can continue to do QRY^T12 to KHIE Web Services for CCD. KHIE will continue to support silver level connectivity and gold level connectivity. Gold level connectivity is currently in the User Acceptance Testing phase by CHFS.

By October 30, CCD connectivity will be established with the edge server exchange framework to provide it with the capacity to “pull” the c32CCD using the existing KHIE CCD orchestration process that is already in production. Connectivity between edge server framework and the KHIE will be done via an HL7 message exchange. The edge server exchange framework will issue the query to the KHIE through the HIEPartnerService Web Services and the KHIE will respond with A DOC ^ T12 with the appropriate recipient’s CCD. During phase II, the focus will be on the rollout of the KHIE while expanding connectivity to additional hospitals and physicians.

During phase III, the KHIE CCD Orchestration will become agnostic to its data contributors, relying solely on the RLS/XDS.b registry as pointer to various data contributions. Completion of this activity will create the possibility of moving the orchestration process into the edge server exchange framework. Additionally, a patient portal will be incorporated into the joint framework.

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#### B.1.4—BUSINESS AND TECHNICAL OPERATIONS

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##### **Implementation**

The critical question facing the Commonwealth (and no doubt other states and territories as well) is once the technical infrastructure is in place, will providers be prepared and willing to use the KHIE to exchange health information? There is no doubt that the challenge is substantial. The US Census Bureau estimates Kentucky’s population to be in the neighborhood of 4.2 M. Largely rural, 98 of the state’s 120 counties are categorized as non-metropolitan. Fifty-four counties are designated by federal statute as Appalachian. Forty-three of Kentucky’s 120 counties are classified as “Persistent Poverty” by the Economic Research Service. Eighty-five (85) of the state’s counties are designated as being medically underserved. In comparison a 2001 study published in the *American Family Physician* reported only one-fourth of the nation’s counties as being medically underserved.

The Provider Adoption and Meaningful Use Committee contributed to the gap analysis with first-hand reports from the members and guests about the status of adoption in their respective communities and among their professional peers. The Committee affirmed that healthcare is local; 95 percent of medical care occurs within a local “ecosystem” between the patient, primary care provider, hospital, consulting physician(s), and allied and home and community based providers.

A strong business case can be made for sharing patient data within this patient-centered ecosystem. The benefits of HIE can be realized quickly among the providers who achieve stage 1 meaningful use through the coordination of patient care and sharing of patient summaries, e-prescribing, and the exchange of lab data. And, because of the “quick win,” the value of HIE is established locally and

communicated to other providers. The value perception will contribute to adoption and meaningful use and over the long term to HIE sustainability. This is very important in Kentucky as its residents are known for their strong sense of regional identity. Consequently, local and regional acceptance plays a very important role in the success of statewide initiatives.

The referring practices that supplement the patient-centered ecosystem when a service is not available or a higher level of care is required extend the reach to include other providers and organizations in the region. The Dartmouth Health Atlas refers to this extended network as the Hospital Referral Region (HRR). Nine hospital referral regions cross Kentucky. (In compiling data for the gap analysis, the Evansville, In/Henderson, KY RR and Owensboro HRR were combined into one regional profile.) (Refer to Appendix A and B for the 8 HRR Profiles.) The HRR health care market(s), including pharmacies and laboratories serving the area, will be assessed with input from the RECs and other local providers during the rollout of the KHIE to use in determining priorities for connectivity and other assistance.

GOEHI will coordinate delivery of services to healthcare organizations and providers and use the following criteria, which are in descending order of priority, to target outreach and services to those who would benefit most:

1. The healthcare organizations and providers in the HRR who are eligible providers for incentives payments and who have a high level of organization and technical maturity (may be part of a larger network of hospitals and/or affiliated practices in which a single connection will on-board a number of hospitals, physicians, etc., which in turn, will expedite critical mass)

The healthcare organizations and providers in the HRR who are eligible providers for incentive payments but are organizationally and/or technically immature, such as, (but not limited to) community hospitals and other small hospitals

2. The healthcare organizations and providers who are not eligible for incentives but play a critical role in the ecosystem and whose participation would boost participation among other providers/organizations and expedite critical mass
3. The healthcare organizations and providers in the HRR who are not eligible for incentives but have a high level of technical maturity (and are likely to be self-motivated to take the necessary steps to connect on their own to the HIE with minimal assistance) and may or may not impact a provider's attaining meaningful use
4. The healthcare organizations and providers in the HRR who are not eligible for incentives payments, are organizationally and technically immature, and have limited to no impact on a provider's attaining meaningful use (Although these providers will be a lower priority, as other providers become connected and reach maturity, GOEHI and the RECs can then focus on bringing these providers on-board)

It should be noted, the KHIE pilot that is underway used findings from the 2008 UK Medical Trading Analysis study (the results of which are very similar to those of the Dartmouth HRRs) to identify

four hospitals, including a university medical center serving central and southeastern Kentucky in the Lexington HRR to participate in the pilot. (The fifth is the state's other university medical center, which is located in the Louisville HRR.) The criteria used to select the hospitals for the pilot was very similar to that being used for the statewide rollout. One of the four hospitals, for instance, operates seven hospitals across the region for which connectivity can be achieved through a single link. All belong to large healthcare organizations that operate or manage one or more hospitals and also have a number of affiliated physician practices. All of the six pilot hospitals also account for a large volume of Medicaid patients.

The KHIE rollout will be carefully coordinated with the RECs and other efforts (such as those undertaken by KMA and the KHA) to maximize staffing resources and minimize duplication of efforts. Cabinet staff (for which positions are included in the budget of this application) will be deployed to the regions to provide on-the-ground assistance during implementation in coordination with the RECs and RHIOs. Staff will identify local leaders who, in turn, will agree to convene the other stakeholders in the area, facilitate the execution of Provider Agreements, and assist and “champion” other providers to adopt HIT and participate in HIE.

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### B.1.5—LEGAL/POLICY

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The benefits of health information exchange can only be fully realized if patients and their healthcare providers are confident that personal health information is kept private and secure. This requires the development and implementation of the policies, accountability strategies, and architecture and technology that are essential to realizing public trust. To this end, the Privacy and Security Committee was tasked with recommending privacy and security policies, legal agreements, and risk management strategies to ensure that the eight principles articulated in the Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information (2008) underscore the KHIE. The principles are: 1) Individual Access; 2) Correction; 3) Openness and Transparency; 4) Individual Choice; 5) Collection, Use, and Disclosure Limitation; 6) Data Quality and Integrity; 7) Safeguards; and, 8) Accountability.

The Committee identified five areas for study and recommendation to the KHIE Coordinating Council relative to the Framework:

1. Policies and Procedures for Preserving the Privacy and Security of Health Data Exchanged through KHIE
2. Strategies for Risk Management/Mitigation and Ongoing Compliance to Security and Privacy Standards As They are Developed
3. Model Trust/Data Sharing Agreement
4. Legal Barriers and Solutions
5. Patient Preferences—Consent/Authorization to Participate in or to Opt-out of HIE

Due to the complexity of the issues, the interdependencies and associated risks, and the need for a high-degree of transparency and stakeholder participation at all levels, the development of privacy and security policies and procedures is an evolutionary process. The Council noted that the findings and recommendations provide the strategic direction for GOEHI and the stakeholders; and,



represent a starting point for a number of actions that must occur to protect, strengthen, and promote electronic health exchange.

#### B.1.5.1—PRIVACY AND SECURITY

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### **Policies and Procedures**

The Council concurred with the Committee recommendation that policies and procedures for preserving the privacy and security of health data exchanged through KHIE be developed. GOEHI staff including the deputy executive director, staff attorney and two policy analysts will be tasked with developing the policies and procedures as described below:

- General
  - Policies and procedures will be drafted by GOEHI in collaboration with the relevant Committee(s) and presented to the Coordinating Council for review, comment, and adoption through a consensual process. In the development of policies and procedures, GOEHI and the Committees may elect to consult individuals and groups who have knowledge/experience relevant to the particular focus of the policies and procedures. Such policies and procedures will be made available on GOEHI's website. The policies will be broadly stated with the related procedures being more specific and detailed and subject to change more frequently as technology and standards (or other variables) change.
  - Policies and procedures may be amended from time to time so long as amendments are not inconsistent with the Participation Agreement and notice is provided to Participants with an opportunity to contribute.
  - Participants will be given a reasonable period of notice prior to the implementation of proposed policies and procedures.
  - Policies and procedures are necessary to facilitate exchange of information in compliance with HIPAA's Privacy and Security Rules, other applicable federal law and applicable state law. Policies and Procedures will govern the use, submission, transfer, access, privacy and security of data.
- Security
  - Policies and procedures will be established as necessary to reasonably assure compliance by KHIE (and its subcontractors) with the standards of the HIPAA Security Rule applicable to Business Associates of HIPAA covered entities.
  - GOEHI, with the assistance of the Privacy and Security and the Interoperability and Standards Committees, will develop policies to address the following issues:
    - Positive patient identification for data returned to the requestor;
    - Standards for establishing the data elements required as part of the request process;
    - Standards for identifying provider of patient data (source);
    - Encryption of data in transit and during vendor caching for the HIE;
    - Standards that define Participant's responsibilities dealing with identifying its own internal users of HIE data;



- Master Patient Indexing (establish standards regarding which identifiers will be used, how are they weighted, what are the algorithms and need to continuously update based on feedback from Participants);
  - Timing and procedures related to caching of data.
- Privacy
  - Policies and procedures will be established as necessary to reasonably assure compliance by KHIE (and its subcontractors) with the standards of the HIPAA Privacy Rule applicable to Business Associates of HIPAA covered entities.
  - The Privacy and Security Committee will consider further the responsibility of participants and KHIE to correct known errors in patient information, misidentification, and patient requested amendments. In its recommendation, the Committee notes that this responsibility facilitates the data integrity and quality principle espoused by the ONC. However, the Committee also recognizes the challenges that accompany this responsibility and the communication of the changes or errors to participants who have received information affected by the changes.
  - If the KHIE is required, or HIPAA covered entities are required, to account for disclosures made through an HIE for purposes of treatment, payment and operations under new HITECH requirements, then the infrastructure to provide such an accounting will need to be developed and a process will need to be developed to provide such information to patients and participating covered entities upon request.
  - As the KHIE grows to include source data beyond Medicaid data, the Council will consider whether additional types of data should be available within the KHIE. For instance, the current Participation Agreement states that the following information will be made available by participants who have committed to be Data Providers: hospital-specific inpatient data, outpatient surgical data, ED data and ambulatory care data. Other information that may also be important to patients and their providers includes personal representation information and advance directives or power of attorney.

## **Trust Agreements**

Participation Agreement (PA) and Business Associate Agreements (BAA) currently in effect will serve as a starting point. These documents establish the framework of legal responsibilities of Participants and the KHIE. (See the current version of the PA and BAA in Appendix K and L.)

- The PA incorporates by reference the policies and procedures established for the KHIE.
- The same agreement must be signed by all Participants to reduce the resources necessary to negotiate and to help establish trust among all Participants.
- All Participants should have the same obligations with respect to the privacy and security of Protected Health Information, even if not HIPAA covered entities.
- The PA is a living document and will continue to be modified as necessary to implement any changes to the initially contemplated structure of the KHIE, to require additional or different obligations of or restrictions on the parties as recommended by the Coordinating

Council, Privacy and Security Committee or any other committees of the Council, to address obligations of Participants who are not HIPAA covered entities, and to address changes in applicable laws and/or guidance.

42 CFR Part 2 (Part 2), the federal law that governs the confidentiality of alcohol and drug abuse patient records, is applicable to the sharing of substance abuse information with health information exchanges. The law imposes restrictions on disclosure of any information disclosed by a Part 2 program that would identify a patient as a substance abuser. Generally, patient consent must be obtained prior to disclosure, except in situations of medical emergencies, audits, and evaluations. Beyond medical emergencies, audits, and evaluations, a Part 2 program may share information without patient consent for administrative purposes with qualified service organizations (QSOs) and with entities that have direct administrative control over the Part 2 program.

### **Oversight of Information Exchange and Enforcement**

The Council concurred with the Privacy and Security Committee's recommendation for a number of strategies for Risk Management/Mitigation and Ongoing Compliance to Security and Privacy Standards. Policies and procedures should be developed to manage breaches and misuse of health information, including systems monitoring and establishing security, workforce training and reporting procedure.

- As part of the regular assessment and monitoring of the KHIE system, protocols should be established for penetration testing of potential vulnerabilities to prevent intrusion by hackers, malware, and viruses. Similarly, review the penetration testing developed by vendors who handle patient information. Although the Committee did not determine the standards for the assessment and testing, the Committee did suggest an independent party regularly review both the Cabinet implementation of the HIE and standards used by its major contractor(s) to manage the HIE.
- Policies and procedures should be developed to address enforcement of obligations, investigations and resolutions of potential breaches/misuses/non-compliance, and notifications of identified breaches/misuses/non-compliance.
- Programs should be established to audit and monitor KHIE compliance, vendor/subcontractor compliance, participant compliance and take corrective action when necessary. The Committee recommended that the CHFS consider using an independent firm to perform certain level of auditing on a regular basis, such as annually.
- Contingency and disaster recovery plans should be developed to avert disruption in business operations of KHIE.
- Audit logs should be available for tracking & investigation purposes. Details about type of data accessed, by whom, and when (but not the actual personal health information

accessed) need to be available upon request by participants to facilitate investigation and compliance monitoring. Audit logs will also assist when it is necessary to notify data recipients of incorrect, updated or misidentified information.

- A disclaimer be added to CCD format to warn recipients about potential gaps in data (coverage or treatment), potential mismatches of data, and recommendation that recipient verify and validate data prior to relying on it when practicable.
- Policies and procedures be considered that encourage Participants to notify HIE of known inaccuracies and mismatches of data shared through the HIE. This would include situations in which a patient's identity is being used by someone other than the actual patient.

## State Laws

**Inconsistent and antiquated facility licensure regulations:** Kentucky's health facility licensing laws and regulations and their differing confidentiality provisions have been identified as a major barrier to the interoperability of health information. Kentucky's medical records provisions are found largely in Kentucky Administrative Regulations (KAR) Title 902, Chapter 20. These regulations govern licensure of various types of health care facilities, including but not limited to hospitals, skilled nursing facilities, and home health agencies. In these regulations, there are multiple standards for retention, access, disclosure and transfer of medical records across different types of health care facilities. In some cases, the regulations require a "proper release" to transfer records to another health care provider for the purposes of treatment. This language differs significantly from HIPAA's exception for treatment, payment and operations. While HIPAA created a national baseline for protecting health information, it did not necessarily remove existing state law barriers to the exchange of electronic health information. Where state law provides more stringent protections for privacy and security, state laws "preempt" or override HIPAA. Thus, state regulations requiring a release are more stringent than HIPAA and therefore preempt HIPAA. While many of these regulations also emphasize the need for continuity of care, the requirement for a release before sharing information for treatment means that some health care information may not be accessible in electronic form. In an electronic environment, this may also impede timely information exchange.

On the other hand, when state laws and regulations do not meet HIPAA's standards, then HIPAA preempts state law. This interaction means that a preemption analysis has to be performed that compares state law and HIPAA to determine whether state or federal law governs in a given circumstance. In Kentucky, collaborative work by the HIPAA Action Workgroup of Kentucky (HAWK), the University of Kentucky and others have attempted to clarify state law preemption issues for providers and practitioners. Further analysis is needed in order to build the technical infrastructure of an HIE to accommodate each affected type of health information or health care facility providing data to the exchange.

Much of Kentucky law and regulation governing health care and public health were passed prior to the conceptualization of an electronic health record. In some cases, law and regulation may simply be out-dated and have not changed in decades to reflect current practices. The law has not kept pace with new technology developments. Emerging practices such as e-prescribing, health information exchange, RHIOs, and personal health records are so new and dynamic that health care entities may be operating without clear legal parameters.

Special requirements for sensitive patient information such as HIV/Aids, sexually transmitted diseases, substance abuse records, and mental health records. State laws lack consistent standards for protecting sensitive patient information such as HIV/AIDS, sexually transmitted diseases, mental health, substance abuse records and communicable diseases. In order to implement an HIE it will be important to identify whether these laws require modification to accommodate the electronic exchange of information and the technical modifications to an electronic exchange that may be required in order to comply with state law.

**Definition of “medical record:”** Kentucky law requires health care providers to provide, without charge to the patient, a copy of the patient’s medical record. Kentucky law is not clear on what specifically constitutes a patient’s medical record. Furthermore, the HIPAA privacy rule defines “designated record set” as a group of records maintained by or for a covered entity that includes the medical and billing records about individuals maintained by or for a covered healthcare provider. This definition has been viewed as overly broad for HIE purposes. For example, a diagnostic image that has been interpreted by a specialist traditionally has not been treated as being part of the “medical record” while the actual interpretation has been included. However, under HIPAA, the actual image could be considered part of the designated records set.

**Status of records in the possession of one provider but received from another provider:** The status of records in the possession of the first provider but received from a second provider presents a legal barrier in the context of an HIE as it pertains to the health information transmitted by the first provider. It is likely that the first provider will choose to include the health records in the records provided to the exchange. The resulting benefit is that it may make a record available that would otherwise not be in the exchange (due to the second provider’s nonparticipation in the exchange). However, the first provider will need a mechanism to adequately identify such records in the exchange for purposes of its own liability protection because the first provider is not capable of certifying the accuracy or completeness of the second provider’s record.

**Lack of clarity regarding authorized patient representative:** Kentucky law has been perceived as lacking clarity related to personal or legal representatives. In most cases, under the HIPAA Privacy Rule, healthcare providers must treat a personal representative just as the provider would treat the individual who is the subject of the protected health information. Thus, under federal law, a personal representative has all the rights that a patient would have with respect to access and control of the individual’s protected health information. Under Kentucky law, however, a personal representative is a special category of legal representative allowed only under certain circumstances, such as:

- When a court has appointed someone as a legal guardian,

- When an individual has been granted specific power of attorney to act on behalf of a patient, or
- When a patient lacks “decisional capacity” and there is no legally executed document directing who should make health care decisions for the patient.

When a patient has not designated in writing a particular individual to make decisions for him or her, personal representative status is granted in descending order to the following classes of individuals:

- Judicially appointed guardian, provided that medical decisions are within the scope of the guardianship;
- Spouse of the patient;
- Adult child of the patient or a majority of children if the patient has more than one child;
- Parents of a child;
- Nearest living relative; or
- Executor of a patient’s estate.

Moreover, the personal representative is not generally treated in the same manner as the individual patient and can only give authorization for disclosure of protected health information relating to the matters for which he or she is representing the patient.

Minors are also afforded special rights under Kentucky law and may seek treatment without parental consent under certain circumstances. When such minors exercise their right to provide consent on their own behalf for treatment, they may serve as their own personal representative and control access to their medical information.

Therefore, it may be unclear who may reasonably execute consent/authorization to disclose information for an incapacitated or intellectually disabled patient, or minors. Clear guidance may be required to health care entities concerning the disclosure of protected health information to legal representatives and concerning the authority of legal representatives to control access to the disabled or minor patient’s health care information.

**Unknown requirements with bordering states to exchange out-of-state records and out-of-state providers:** Kentucky patients are often treated at facilities in other states, particularly since seven states border Kentucky Authorization for the transmission of records through a health information exchange that is legally sufficient in one state may not meet the standards of another state. This issue may require case-by-case analysis of bordering states’ privacy laws and the ability to implement technology to assist in effective transfer of health information in compliance with such laws.

**Allocation and limitation of liability:** Regardless of the disclaimers in the Participation Agreement, the potential for compensable patient harm in relation to health information exchange has the potential to deter full participation. Healthcare providers may be reluctant to participate in an exchange if there is a perception that having access to a patient’s medical history and records will subject them to greater liability. For instance, if a patient suffers harm, such as a medication error, and a review of prior medical records available in the exchange would have revealed an

adverse reaction to such medication, will the availability of information pose as a source of potential liability to the provider?

Additionally, providers may be reluctant to participate out of fear that the exchange exposes them to liability for privacy and security breaches outside of their control. The fears can be alleviated by education to providers on the best ways to use HIE and ways to reduce their liability for use or non-use of information obtained through the exchange. Openness and transparency of the HIE, its safeguards and policies may also help to reduce these concerns. A new state law or regulation specifically addressing HIE could also address limits of liability if HIE participants comply with the established privacy and security standards and provide reasonable safeguards.

#### **Processes to address state law barriers:**

- Request revision to individual state laws or develop model state law for Health Information Organizations.
- Modification of health care regulations.
- Analyses of bordering states law for inconsistencies.

#### **Other**

##### Patient Preferences – Consent/Authorization to Participate in or to Opt-Out of HIE:

The Kentucky Health Information Exchange (KHIE) initial pilot implementation currently operates utilizing the consent given by a patient at the initial point of care. The general standard for health information exchange under HIPAA is that authorization is required. The most common exception is 45 CFR 164.506 commonly referred to as TPO, treatment, payment, and operations. This exception allows protected health information to be exchanged for purposes of treatment, payment or operations without authorization. Kentucky state regulations governing medical records lack a treatment, payment or operations exception. There are Kentucky regulations considered to be more restrictive than HIPAA. Thus the practice in Kentucky is to incorporate a patient authorization or release of information in patient registration materials to ensure that providers may disclose information for treatment, payment and operations. The PHI provided to KHIE is being exchanged according to the information releases collected by the providers at the time of treatment.

Demographic information from any patient treated at a participating provider could be included in the Master Patient Index (MPI). The MPI will include information such as name, address, DOB, gender. The KHIE will also maintain a Record Locator Service (RLS) as part of the HIE. The RLS will include indexed location information about the patient's record. This will permit KHIE queries to locate patient information and build a Continuity of Care Document from information retrieved from the participating provider's location medical record system. The MPI and the RLS will be kept in a secure location managed by the KHIE selected vendor. The original participants in the KHIE determined this model to be the most advantageous method to enable the quick inclusion of information through the KHIE. The use of the original patient authorization is made possible by the limited uses of information permitted under the original Participation Agreement. Currently, the



KHIE and its participants have agreed to exchange information only for treatment, payment and limited operational purposes designed to permit Kentucky Department of Medicaid to fulfill the terms of the funding grant. Ideally, the goal is for the KHIE to support meaningful use and to assist providers in qualifying for HITECH subsidies relative to meaningful use.

User involvement is also a foundational construct for openness and transparency of the KHIE operations. Under the federated portion of the KHIE, the patient information will not be centrally stored by the KHIE. Rather, the medical record will remain within the local systems of the participating providers. The KHIE will use the MPI and RLS as a directory for locating the full medical information for an individual. Additionally, the KHIE software will retrieve and deliver the records. Because the records remain in the custody of the provider, the patient has greater control of the medical record information.

GOEHI is in the process of examining options for the KHIE to operate under an Opt-Out Model, including the point at which patients will have the ability to Opt-Out. The full range of options is being considered, including Opt-Out at the point of care or at an Internet site hosted by the KHIE. The use of multiple media forms to make users aware of the KHIE operations and the options available to control participation also will be considered. Ultimately, only limited mechanisms may be made available for the Opt-Out process. While it is desirable to have many options for the patient choice, the KHIE will need a process that can be managed within the confines of available staff, and not be burdensome on the participating providers.

The Privacy and Security Committee also considered the role of user awareness and education to target patients and the providers. Once the implementation plan for the Opt-Out process is determined, both groups will need to be educated about the benefits and options for using the KHIE, as well as the patient's opportunity to opt-out of the KHIE. The Privacy and Security Committee recommended to the KHIE Coordinating Council that a broad range of resources be provided to make patients aware of the benefits of participating in the KHIE and their options for controlling their own medical information. Additionally, participating providers will need to be educated on patient options in order to manage questions at the point of care. The Council concurred with the recommendation.

In its findings, the Committee recognized areas of federal and state law requiring specific patient consent in order to release the information to other providers. For instance, the Committee has determined that 42 CFR Part 2, which protects records from certain substance abuse treatment programs, and other state laws, such as those that protect records of certain communicable diseases, afford greater protection than HIPAA's Privacy Rule.

The Committee has considered that accounting for patient preferences includes the patient's ability to decline participation in the KHIE. The consent process also affords an opportunity for patient consent required for specially protected health information to be made available by the KHIE for uses that require patient consent/authorization. The Privacy and Security Committee believes, and the Council agrees, that an effective HIE needs patient consent to build a complete and clinically actionable profile of their medical information that adds value for other providers using the KHIE. To that end, the KHIE is approaching the Opt-Out process and consent for special health



information as common problems. As part of accounting for patient preferences, a robust HIE will need more patient input than a general Opt-Out model affords. The KHIE is evaluating all technical means and all different forms of media as possible ways for the KHIE to gather feedback from patients on how their health information can be used. Kentucky has representation on a multi state committee considering consent models for HIE.

## II. KENTUCKY OPERATIONAL PLAN FOR HEALTH INFORMATION EXCHANGE

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While the ARRA State Health Information Exchange (HIE) Cooperative Agreement program provides needed financial resources to the Commonwealth, the provisions of ARRA for provider adoption and meaningful use represent a significant challenge to the State. It is projected that less than one percent of healthcare providers and organizations currently engage in health information exchange across unaffiliated networks. Similarly, the adoption rate varies widely across the state's Hospital Referral Regions from 40.6 percent to 17 percent. (Refer to Regional Profiles in Appendices A and B.)

The stakes for the project are high, especially in regards to access to care. With two out of three Kentucky counties medically underserved, the financial penalties for physicians who fail to meet meaningful use could lead them to close their practices to patients with Medicare. The State's expectation that Medicaid providers participate in health information exchange could lead to reduced provider participation at a time when coverage is expected to be extended to approximately 300,000 Kentuckians and further impede the program's capacity to enroll beneficiaries and manage their care through medical homes. Also of concern, is the potential impact on the state's critical access hospitals, small community hospitals, and the eight hospitals classified as Medicare Dependent.

Conversely, the opportunity to improve the health status of the Commonwealth represents tremendous benefit as the State struggles to improve access to and quality of care, reduce healthcare costs, and position its residents to realize the full benefits of economic recovery.

The Kentucky Health Information Exchange (KHIE) Coordinating Council and Committees contributed their vast expertise and personal experience toward the development of the Operational Plan to assure that every provider has at least one option for use in meeting stage 1 meaningful use requirements. Their work included the identification of the interdependencies and challenges, and the associated risks. In presenting their findings, the Committees recommended strategies to use in mitigating or managing the risks. The recommendations represent a breadth of understanding of the issues that no one stakeholder group could produce, which is critical to the successful deployment of HIE. (Findings and recommendations from each of the six Committees are included in Appendices D-I.)

The Operational Plan describes the activities that will be undertaken to build programmatic and/or technical capacity in each of the five domains of HIE: 1) governance; 2) finance; 3) business and technical operations; 4) technical infrastructure; and, 5) legal/policy. A detailed work plan specifies the actions that will be undertaken and the timeline for completion. It includes cross references to ONC requirements specified in the Fund Opportunity Announcement (FOA) for each of the five domains that states are required to complete by the end of the second year of grant funding. It also specifies grantee requirements issued by ONC in March 2010 and in a July 6, 2010 Program

Information Notice (PIN). The work plan also links the proposed actions developed in response to one or more Committee recommendations. (For example, the description for Action Step 1.2 is followed by [AT 2.0]. This references the Accountability and Transparency Committee's Recommendation 2.0. Other abbreviations used in the work plan for the Committees include: BF (Business Development and Finance); IS (Interoperability and Standards); PH (Population Health); PA (Provider Adoption and Meaningful Use); and, PS (Privacy and Security).

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## A.1—COORDINATION WITH ARRA PROGRAMS

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Kentucky is soundly positioned to meet the grant stipulation that the state leverage existing resources and work in tandem with ARRA supported programs to advance health information exchange. As Kentucky Public Health Commissioner William Hacker frequently says: “We are *mouse-ready*.” This is true in that a cadre of stakeholders has been actively working for a number of years to realize the vision for health information exchange. Many of the same stakeholders have come forward to serve on the KHIE Coordinating Council and Committees, partner with the state's two Regional Extension Centers, and advocate among their professional peers and other healthcare providers for the use of HIE.

Coordination of these efforts is now critical. A description of the ways in which GOEHI will coordinate their efforts with the other ARRA funded health IT programs follows.

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### A.1.1—REGIONAL EXTENSION CENTERS

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Kentucky has two Regional Center grantees, the Tri-State Regional Extension Center (HealthBridge is the grantee) and the University of Kentucky Regional Extension Center. Together, they provide statewide coverage. The Tri-State REC serves 37 counties in Northeast and Central Kentucky. The University of Kentucky REC serves 83 counties outside of the Tri-State service. A representative from each of the RECs serves on the KHIE Coordinating Council.

Regularly scheduled meetings between the RECs and GOEHI /OATS began shortly after the RECs received word that they had been funded. The meetings will continue throughout the grant period. Additionally, the RECS will provide quarterly updates to the Provider Adoption and Meaningful Use Committee and assist the Committee when it updates the gap analysis in January of each grant year for the State Plan.

Beginning in December 2010, GOEHI and the RECs will deliver a comprehensive outreach and education program to providers across the state throughout calendar year 2011. The program will target hospitals and providers in 12 regions of the state corresponding to the state's Hospital Referral Regions (because some of the regions are so large, several sub-regions have been identified). In each region, GOEHI, OATS, and REC staff will conduct provider orientations and demonstrations, while describing the options available through the KHIE (and the RHIO in those areas served by a RHIO) for use in meeting stage 1 meaningful use. Providers will also receive information on the services and supports available to them through the REC and/or the KHIE to include (but not limited to):

- Option A: Connectivity to the KHIE if provider has current capability to send and receive a CCD.
- Option B: Connectivity to the KHIE using the edge server via HL7 2.x over VPN model. In the edge server model where CCD format is not directly supported, a clinician can still access the CCD via a provider portal to a virtual health record. This enables the clinician, whether hospital or community-based, to view a patient care summary. This summary record would contain clinical data from all organizations connected to the KHIE. It would allow for receipt of structured lab results and would have e-Prescribing capabilities.

To expand the reach of services to extend to providers who do not qualify for the Medicaid/Medicare incentives program and/or REC services but are vital to the health services ecosystem of the community, the KHIE will offer assistance to clinical laboratories and community pharmacies that otherwise would not have the capacity to support providers in achieving meaningful use. Financial assistance also will be provided to support interoperability between existing EMR systems and the KHIE for hospitals, safety net providers, and clinics that meet needs-based eligibility criteria. Additionally, the KHIE will offer a Connectivity Assistance Program for hospitals and providers that includes the costs of establishing initial connectivity to the KHIE and maintenance; annual license and maintenance fees; software license; hosting services; and professional services.

GOEHI will use the following criteria, which are in descending order of priority, to target their outreach and services to those who are not being served by the REC and who would benefit most:

1. Healthcare organizations and providers who are eligible providers for incentives payments and who have a high level of organization and technical maturity; and, healthcare organizations and providers who are eligible providers for incentives but are organizationally and/or technically immature, including small community hospitals and clinics.
2. Healthcare organizations and providers who are not eligible for incentives but play a critical role in the healthcare ecosystem and whose participation would boost participation among other providers/organizations and expedite critical mass.
3. Healthcare organizations and providers who are not eligible for incentives but have a high level of technical maturity and may or may not impact a provider's attaining meaningful use.
4. Healthcare organizations and providers who are not eligible for incentives payments, are organizationally and technically immature, and have limited to no impact on providers attaining meaningful use.

THE KHIE vendor will provide guidance for assessing readiness, interface requirements, and hardware and software needs; support interface testing; and validation and go-live. The KHIE vendor also will provide training and operate a help-desk for providers and vendors requiring assistance.

A detailed implementation schedule and other details are included in the work plan in Section B1.2.1. It is important to reiterate that the proposed scope of work will be developed and carefully coordinated with the RECs.

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### A.1.2—WORKFORCE DEVELOPMENT INITIATIVES

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A representative of the Council on Postsecondary Education serves on the KHIE Coordinating Council. The Council is the state body charged with coordinating change and improvement in post secondary education throughout the Commonwealth. This includes the identification and prioritization of workforce needs that require post secondary education and specialized instruction to meet the demand for services. The Kentucky Community and Technical College System (KCTCS), a member of the Council on Postsecondary Education, is a member of the 13-state regional consortium of 21 community colleges that received ARRA funding to build the capacity of health IT professionals. The effort is being led by North Carolina-based Pitt Community College. Each community college will create non-degree training programs designed to be completed in six months or less. The training is expected to begin by September 30, 2010 in six health/IT priority workforce roles, including: practice workflow and information management redesign specialists; clinician/practitioner consultants; implementation support specialists; implementation managers; and technical/software support staff and trainers. During implementation of the KHIE, coordination with KCTCS will be critical. Representatives from the participating community colleges will be invited to participate in the planning of the regional rollout that will be coordinated by GOEHI with the RECs, RHIOs, and other local resources (such as the Area Health Education Centers [AHECs] and public and private medical education programs serving the region).

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### A.1.3—BROADBAND MAPPING AND ACCESS

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A representative of the Finance and Administration's ARRA-funded broadband initiative in the Commonwealth Office of Technology (COT) serves on the KHIE Coordinating Council. The broadband coordinator will meet regularly with the Provider Adoption and Meaningful Use Committee to update them on the statewide mapping initiative, coordinate efforts to identify gaps in broadband access, and advocate for the needs of medically underserved communities and safety-net providers and their access to high speed broadband at an affordable cost. OATS has supplied the initiative with the names of medically underserved counties and a list of Federally Qualified Health Centers and other safety net providers. In September 2010 COT will receive findings from a comprehensive statewide broadband mapping project, which will be presented to the KHIE Coordinating Council and the Provider Adoption and Meaningful Committee.

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## A.2—COORDINATION WITH OTHER STATES

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The State HIT Coordinator will coordinate efforts to advance HIE with other states, contribute to the body of evidence-based practices that emerge through implementation of statewide HIE, and participate in national and inter-state efforts to identify and remove barriers to interstate data exchange and connectivity to the NHIN. The State HIT Coordinator will participate in ONC HIT Leadership forums and serve on national advisory groups to advocate for HIE. He will maintain

regular contact with the HIT Coordinators in adjacent states and seek opportunities to prioritize, plan, and take the necessary steps to remove barriers to bi-directional data exchange across state boundaries in the six Hospital Referral Regions that cross Kentucky's borders. Upon the Plan's approval by ONC, a copy of the State Strategic and Operational Plan will be provided to each of the HIT directors in the six states. The Plan will also be posted to the GOEHI website.

GOEHI will continue the Kentucky tradition of participating in multi-state e-health initiatives, such as the Harmonizing State Privacy Law Multi-State Collaborative (HSPLC) and Southeast Regional HIT-HIE Collaboration (SERCH). More recently, Kentucky joined the Nebraska Information Technology Commission and the Nebraska Health Information Initiative and eight other State HIT Programs in preparing an application for funding to form the Midwest Consortium. The Consortium would focus on identifying and resolving barriers to interstate data exchange. Although the initial application was not funded, the Consortium is reapplying for funding in September 2010. Kentucky participates in weekly conference calls with all states in the CMS southeast region to discuss health information exchange and incentive payment issues.

One of the hospitals in the KHIE pilot is a multi-hospital ownership company that operates hospitals in Southeastern Kentucky and neighboring Southwestern West Virginia. The system's nine acute care hospitals connect through a single link to the KHIE. This landscape provides an excellent opportunity for GOEHI to identify and address the barriers to HIE across state lines. Because of the attention required to bring Kentucky hospitals on-board through the first and second grant years, this initiative will be deferred until the 3<sup>rd</sup> grant year.

GOEHI/OATS staff will continue to make presentations at regional and national HIT conferences and during ONC and CMS calls for state HIT coordinators. Other CHFS staff who support HIE through their various programs, including the State Public Health Commissioner and the State Public Health Laboratory Director, have been very active in presenting e-health and HIE related information to their constituent groups. Dr. Hacker, the state health director, represents the Association of State and Territorial Health Officers (ASTHO) on a number of HIE-related national workgroups.

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### A.3—COORDINATION WITH MEDICAID AND PUBLIC HEALTH

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GOEHI works closely with the Departments for Medicaid Services and Public Health. The Commissioners of both departments serve on the KHIE Coordinating Council. The KHIE is being developed with funding from a Medicaid Transformation Grant. The GOEHI Executive Director oversees the business development of the KHIE. The CHFS CIO/Deputy Executive Director is responsible for the technical development of the KHIE. The delegation of responsibility for all CHFS technology to OATS facilitates identification and planning for interoperability and connectivity to the KHIE as the Cabinet's existing health systems are modified and new systems developed.

**The State Medicaid Health Information Technology Plan:** The development of the State Medicaid Health Information Technology Plan (SMHP) is being closely coordinated with the State HIE Strategic and Operational Plan. The SMHP will include four components, each of which has a direct relationship to the State HIE Strategic and Operational Plan: 1) a current landscape

assessment; 2) a vision of the state's health IT future; 3) the specific actions necessary to supplement the incentive payments program; and, 4) a roadmap for health IT that communicates to CMS how Medicaid will implement the SMHP and meet the provisions of ARRA Section 4201. GOEHI and OATS will assist the Department for Medicaid Services throughout the development of the Plan. The plan will describe how DMS will leverage existing resources already devoted to health IT in a way that supports section 4201 activities. In this way, DMS will assure that the incentive payments being made for EHR technology are fully integrated with already-existing health IT.

The SMHP, when completed, will describe the MITA (Medicaid Information Technology Architecture), KHIE architecture and functionality, and interoperability with other health IT systems that will be needed to support the 2014 State vision for health IT. The SMHP will describe the assets/resources (and other enabling factors, including public and private participation and support for HIE) that are not currently in place but believed to be necessary to achieve the 2014 provider adoption and meaningful use benchmarks. These and other findings will be presented to the KHIE Coordinating Council and forwarded to the appropriate Committees for review and consideration during the annual update of the State HIE Plan in January-February 2011.

Information from the Plan's development will be used to support the development of a common set of benchmarks; supplement existing provider adoption and HIE data that will be used to monitor performance; and forecasting methodologies developed for the SMHP may be used during the development of the KHIE financial sustainability model.

**Public Health:** As previously stated, the Department for Public Health has been an active partner throughout the development of the KHIE. The vision for electronic exchange of health information with public health data systems is not a recent development. For example, the submission and management of 55,000 birth records annually to public health vital records, blood obtained from heel sticks to the state public health lab, and newborn hearing screening data to the Commission for Special Health Care Needs had long been a challenge because of the sheer volume of transactions and the need for timeliness in processing. In Kentucky, this need was addressed through the collaborative efforts of the Department for Public Health, OATS, and the state's 59 birthing facilities and led to the development of KY-CHILD (Kentucky Certificate of Birth, Hearing, Immunization and Lab Data) system. The system supports the entry of birth information through an integrated Web application. The functionality of the KY-CHILD now is being integrated into the KHIE.

OATS and the Department for Public Health have been focusing their attention on the KHIE and the Department's priorities for connectivity to the KHIE. The need for bi-directional exchange between the state public health immunization registry had been the subject of ongoing discussion for a number of years. The prior immunization registry was part of the local health department information system and physicians and clinics from outside the local health department system could not access the registry to either obtain an immunization history or to enter immunizations into it. The development of the KHIE offered a potential platform through which the exchange could occur.



As the proposed meaningful use criteria were released for review and comment, attention also became focused on the state public health lab's need for bi-directional exchange and the ways in which the KHIE could support this. The need for this capacity (and that of immunizations and infectious disease surveillance) became even more obvious during the H1N1 epidemic of 2009.

In anticipation of the final rule, development began on the interoperability and connectivity required to link the immunization registry and the public health laboratory information system to the KHIE. The immunization system went live in August 2010 and is in pilot now with several health departments and physician offices signed-up to be in the pilot. The lab system will go-live in October 2010 with the state public health lab and one or more commercial labs participating in the pilot. Development is now underway for the KHIE to serve as a platform for bi-directional exchange of syndromic surveillance data.

Funding is being sought from the Centers for Disease Control and the ARRA Epidemiology and Laboratory Capacity (ELC) Grants program to harmonize the output of the extraction/transformation engine of the DPH hospital surveillance project to correspond with the NEDSS Base System (NBS) Application Vocabulary. Vocabulary will be acquired from the PHIN Vocabulary Access and Distribution Service (PHIN VADS) and used to inform the harmonization process. Although not every nationally notifiable disease (NND) is fully represented in the NBS vocabulary, those under electronic surveillance in the DPH hospital surveillance project are, with the exception of sexually transmitted infections. The plan for harmonization is to map each item in the electronic laboratory and morbidity report to their respective identifiers in the NBS application vocabulary. This harmonization step will allow any receiving system that can recognize NBS concepts to accurately interpret the content of the message and act on it appropriately. The harmonized messages will retain their native 2.3.1 format, as this is presently the message structure required by the NBS (soon to be adopted by Kentucky) for processing inbound ELR (electronic laboratory reporting) 2.5.1 and outbound CDC standardized case reports. (Since NBS has not yet transitioned to the HL7 2.5.1 format for inbound ELR and standardized case reporting, DPH has developed the capability to process inbound ELR and express outbound case reports in HL7 2.1, but will not put this format into production until the NBS transition is complete.) The harmonization work is to begin in January 2011 and the project completed for the named diseases and conditions by the second quarter of 2011.

**Population Health:** The alignment of clinical and population health is addressed in the proposed criteria for meaningful use, which include the capture and reporting of health status and behavioral health risks data typically collected and reported by public health departments when reporting on the health status of the community, including: demographic data such as age, gender, race/ethnicity, and insurance type; body mass index; blood pressure, smoking status, (and county of residence to the extent that it does not disclose identity.) The collection of these data through HIE represents tremendous opportunity for public health surveillance and de-identified aggregated reporting of behavioral health risks and personal health practices, and the monitoring and reporting of community health status (to name but a few of the many potential uses of the data).

Although it is not one of the five domains of HIE identified by ONC, many of the issues regarding population health and HIE either directly involve or overlap with federally funded state and local

public health programs. To this end, the CHFS created a sixth committee of the KHIE Coordinating Council to advise the Cabinet on issues related to population health and HIE. The Committee prepared and submitted a list of recommendations to the KHIE Coordinating Council, which the Council adopted at its July 30, 2010 meeting. GOEHI subsequently developed a set of strategies to carry-out the recommendations. The strategies are listed in the Operational Plan's work plan under Goal 5.0: Support alignment of HIE with Medicaid, public health programs, behavioral health and other federally funded state and local health care programs.

## B.1—DOMAIN REQUIREMENTS

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### B.1.1—GOVERNANCE

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**Governance and Policy Structures:** The CHFS has adopted a collaborative governance model for the KHIE. (Also referred to as the state agency model as defined by the National Governor’s Association report on HIE Governance Models.) The Council was created by Administrative Order as a forum for convening, aligning, and coordinating the interests of public and private stakeholders; and, advising GOEHI on the operation of the KHIE. In addition to the Council, the Administrative Order called for the creation of six committees to study and make recommendations to the Council regarding: Accountability and Transparency; Business Development and Finance; Interoperability and Standards; Privacy and Security; Provider Adoption and Meaningful Use; and Population Health.

The membership of the KHIE Coordinating Council is as follows:

**Ex-Officio:**

- Executive Director of GOEHI (serves as Council Chair)
- Commissioners of the Departments for Medicaid Services, Public Health, and Behavioral Health, Developmental Disabilities
- Chief Information Officer of the CHFS
- Executive Director of the Office of Administrative and Technology Services
- Finance and Administration Cabinet (Commonwealth Office of Technology) Broadband Coordinator

**Membership appointed by the CHFS Secretary:**

- One representative from the Kentucky Hospital Association
- One representative from the Kentucky Medical Association
- One representative from a RHIO
- One representative from each of the State’s Regional Extension Center Grantees
- One representative from a health care payor
- One representative from the Kentucky Pharmacy Association
- One representative from a state university in the Commonwealth
- A privacy and security expert (Can self-nominate)
- A consumer representative (Can self-nominate)
- Committee Chairs (6)

Council and Committee members represent a broad cross-section of HIE stakeholders; come from across the Commonwealth; and represent a diverse array of interests. Members serve two year terms and may be re-appointed up to one additional two year term. The Council meets at least quarterly. For those members who cannot attend in-person, a teleconferencing line is set-up so that

they can participate. This line also is available to guests who wish to listen-in to the meeting. Minutes from Council meetings and other related information are posted to the GOEHI website.

The role of the committees is to study issues identified by the Chair and the Council and present findings and recommendations to the Council for review, comment, and acceptance/adoption. Council recommendations are forwarded to the CHFS Secretary for review and consideration when appropriate. The process provides an open-channel of communication between the Secretary, GOEHI, and the stakeholders. It also provides a forum for stakeholders to engage in informed dialogue—and sometimes debate—and arrive at decisions through consensus.

All Council and Committee meetings are open meetings. A calendar is maintained on the GOEHI website with contact information for guests who wish to use teleconferencing to listen-in to meetings.

Each Committee operates under a charter. The Committees also may be asked to assist the GOEHI staff in the development of plans (for example, a communications plan that has been tasked to the Accountability and Transparency Committee) or for input into other initiatives such as policy and procedures development. One or more GOEHI and/or OATS staff is assigned to each committee. (The Department for Public Health assigns staff to the Population Health Committee.)

The Council and Committees first met on May 28, 2010 for kick-off and orientation during which each Committee was presented with a charter. The charters were prepared by GOEHI based on the ONC requirements for the State HIE Cooperative Agreement. The charter's scope of work included a list of deliverables that was to be accomplished over the course of the four-year grant and a list of short-term deliverables corresponding to the FOA's list of "key accomplishments" to be achieved within the first two years of the grant in each of the five domains of HIE. During the period from the date of the kick-off until July 16, 2010 the Committees crafted recommendations in each of the five domains of HIE. A sixth Committee addressed population health.

Committee findings and recommendations were presented to the KHIE Coordinating Council on July 30, 2010. The collective work of the Committees with input from the KHIE Coordinating Council provides the basis for the State HIE Operational Plan. (The full text of the Committee recommendations is included in Appendix D through I.) The KHIE Coordinating Council members also provided comments and input to the State HIE Strategic and Operational Plan. The Council approved the Commonwealth's strategic and operational plan on August 23, 2010.

The Council and Committees will continue to meet on a regular basis. Following notice of approval from ONC for the State HIE Strategic and Operational Plan, the Committee charters will be revised accordingly to reflect the HIE Operational Plan. Thereafter, the charters will be revised annually in conjunction with the review and update of the State HIE Strategic and Operational Plan (and more frequently as needed).

The GOEHI Executive Director will also appear before the E-Health Network Board upon request to report activities of the KHIE. The first such appearance is scheduled for September 1, 2010.

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## KHIE COORDINATING COUNCIL AND COMMITTEES

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### COUNCIL MEMBERS

**Jeff Brady**, Council Chair  
**Elizabeth Johnson, JD, Ex-Officio** – Medicaid Services  
**William D. Hacker, MD, Ex-Officio** – Public Health  
**Stephen Hall, PhD, Ex-Officio** – Behavioral Health, Development and Intellectual Disabilities  
**Kathy Frye, Ex-Officio** – CHFS OATS  
**Frank Lassiter, Ex-Officio** – CHFS OATS  
**Brian Kiser, Ex-Officio** – Finance and Administration Cabinet  
**Paige Franklin** – Kentucky Hospital Association  
**Kimberly Williams, MD** – Kentucky Medical Association  
**Trudi Matthews** – Regional Extension Center (Health Bridge)  
**Rob Edwards** – Regional Extension Centers (UK)

**Elizabeth A. Regan, PhD** – Regional Health Information Organizations  
**Mike Lorch** – Health Care Payors  
**Barry Eadens** – Kentucky Pharmacists Association  
**Troy May** – State Universities  
**Vickie Yates Brown, JD** – Privacy and Security Expert  
**Peggy Lewis** – Consumer Representative  
**Zed Day, Chair** – Accountability & Transparency Committee  
**Gary Ozanich, Chair** – Business Development & Finance Committee  
**Rusty Shanklin, Chair** – Interoperability & Standards Committee  
**Christy Hendricks, JD, Chair** – Privacy & Security Committee  
**David Bolt, Chair** – Provider Adoption & Meaningful Use Committee  
**Jan Hect, Chair** – Population Health Committee

### ACCOUNTABILITY AND TRANSPARENCY COMMITTEE

**Zed Day, Chair** – Retired CIO UK HealthCare  
**Janie Fergus** – IT Director, Catholic Health Initiatives at St. Joseph  
**Lynn Kolokowsky, JD** – Risk Manager, Central Baptist Hospital  
**Lyle Graham, MD** – Retired Physician  
**Carol Ireson, PhD** – Associate Professor, UK College of Public Health  
**Richard Shelby** – IT Director, Hospice of the Bluegrass

**Patty Mason** – VP Planning & Marketing, Central Baptist Hospital  
**Keith Hepp** – CFO< Health Bridge  
**Kerry Kelley** – IT Director, PrimaryPlus  
**David Jacob, OD** – Optometrist  
**Terry Johnson** – Director of IS, UofL Hospital  
**Jeff Knott** – Chairman, Tintagel Holdings LLC

### BUSINESS DEVELOPMENT AND FINANCE COMMITTEE

**Gary Ozanich, Chair** – Professor Northern Kentucky University  
**David Bailey** – Healthcare Executive, St. Elizabeth Healthcare  
**William Doll, Jr, JD** – Attorney, Jackson Kelly, PLLC  
**Martha Riddell, PhD** – Assistant Professor, UK College of Public Health  
**Chris Woosley** – Corporate Controller, Baptist Healthcare System

**Tom Leach** – CFO, Pathways, Inc.  
**Ray Austin** – Faculty, University of Louisville  
**Edwin Snyder** – Bus. Dev. Specialists, Planned Systems International  
**Jean Cherry** – Exec VP/CIO, Commonwealth Health Corporation

### INTEROPERABILITY AND STANDARDS DEVELOPMENT COMMITTEE

**Rusty Shanklin, Chair** – CIO, Pikeville Medical Center  
**Steve Baker** – IT Exec. Director, UK HealthCare  
**David Bensema, MD** – Physician Executive, Central Baptist Hospital  
**Sean McPhillips** – Consultant, CSC  
**Jack Harja** – Provider EDI Process Owner, Humana

**Michael Brown** – IT Director, Baptist Healthcare System  
**Valerie Majors** – Director of HIM, Western State Hospital  
**Trudie Frantz** – IS Director, University Physicians Associates  
**Derek White** – eHealth Strategic Consultant, Humana  
**Mike Whelan** – Manager of Application & Dev., UofL Healthcare

### PROVIDER ADOPTION AND MEANINGFUL USE COMMITTEE

**David Bolt, Chair** – CEO, Regional Health Care Affiliates, Inc  
**Eric Lunde** – Exec. Dir., Memorial Hospital  
**William Adams** – Regional Director of IS, Lourdes Hospital  
**William Travis, MD** – Physician  
**Ruth Booher, JD** – Attorney, University of Kentucky  
**Sarah Chasteen** – Manager, Kentucky Medical Association  
**Jeff Knott** – Chairman, Tintagel Holdings, LLC

**Tom Carico** – Healthcare IT Adm, Baptist Healthcare System  
**Steven Heilman, MD** – Physician Executive, Norton Healthcare  
**Peggy Lewis** – Assistant Director, KY Office of Rural Health  
**Lindy Oechslin** – Physicians Practice Business Analyst, MedX12  
**Karen King** – Director of Physician Services, St. Joseph Health System  
**Polly Bentley** – Director of Clinical IT, Appalachian Regional Healthcare

### PRIVACY AND SECURITY COMMITTEE

**Christy Hendricks, JD, Chair** – Attorney, Baptist HealthCare System  
**Julia Costich, JD** – Faculty, UK College of Public Health  
**Virginia Bradley** – CIO, Breckinridge Health, Inc.  
**Jim Hilvers** – Information Security, UK HealthCare  
**Gui Cozzi** – IT Security Manager, Catholic Health Initiatives at St. Joseph  
**Richard Chapman, JD** – Security and Privacy Consulting

**Kevin Bailey** – IT Director, Pro-Care Home Health  
**Susan Carey** – System Director HIM, Norton Healthcare  
**Michelle Merritt** – Manager Compliance & Ethics, UofL Healthcare  
**Dennis Kennedy, JD** – Attorney, Dressman Benzinger LaVelle PSC  
**William J. Hust, JD** – Lawyer, CCO, MedX12  
**Vickie Yates Brown, JD** – Lawyer/CEO, Frost Brown Todd, LLC

### POPULATION HEALTH COMMITTEE

**Jan Hect, Chair** – Professor, Eastern Kentucky University  
**Connie Barker** – Director, Quality, Baptist Hospital East  
**Shawn Crouch** – Health Admin, UK HealthCare  
**Stephanie Lamar** – Regional Health Council Director, GRADD  
**Shannon Dilsaver** – HIM, MedX12  
**John Tarrant, DMD** – Dentist, KY Department of Corrections

**Maria Russo** – CIO, Jewish Hospital & St. Mary's Healthcare  
**Marilyn Schleyer, PhD** – Professor, Northern Kentucky University  
**Bob Esterhay, MD** – Physician/Associate Professor/Chair, UofL  
**Gerald Joiner** – Chair, LouHIE  
**Heather Gatewood** – Project Manager, CDP, Inc

## B.1.2—FINANCE

### Cost Estimates and Staffing Plans

STATE HIE Cooperative Agreement: KHIE Project Budget					
Grant Period February 2010 - January 2014					
	2010 Costs 2/2010 -1/2011	2011 Costs 2/2011 -1/2012	2012 Costs 2/2012 -1/2013	2013 Costs 2/2013 -1/2014	TOTAL PROJECT
<b>GOEHI-2010</b>					
Executive Director (1.0 FTE)					
Deputy Executive Director (1.0 FTE)					
Executive Secretary (1.0 FTE)					
Staff Assistant (1.0 FTE)					
Staff Attorney (1.0 FTE)					
Internal Policy Analyst II (1.0 FTE)					
Internal Policy Analyst III (1.0 FTE)					
Internal Policy Analyst IV (1.0 FTE)					
Resource Management Analyst III (1.0 FTE )					
<b>GOEHI-2011 Additional Staff</b>					
Internal Policy Analyst II (1.0 FTE)	* \$0.00				
Internal Policy Analyst III (1.0 FTE)	* \$0.00				
Health Policy Specialist II (1.0 FTE)	* \$0.00				
<b>GOEHI-2012 Additional Staff</b>					
Internal Policy Analyst III (1.0 FTE)	\$0.00				
Internal Policy Analyst IV (1.0 FTE)	\$0.00				
<b>Subtotal Direct Labor - GOEHI</b>	<b>\$308,238.15</b>	<b>\$692,359.09</b>	<b>\$773,775.73</b>	<b>\$777,846.56</b>	
<b>Fringe Benefits</b>	<b>\$80,141.92</b>	<b>\$180,013.36</b>	<b>\$201,181.69</b>	<b>\$202,240.11</b>	
<b>OATS</b>					
Systems Consultant IT (1.0 FTE)	\$0.00				
Network Engineer (1.0 FTE)	\$0.00				
Systems Engineer (1.0 FTE)	\$0.00				
Technical Analyst (0.5 FTE)					
Business Analyst (0.5 FTE)					
Project Manager-Not Certified (0.5 FTE)					
<b>Subtotal Direct Labor - OATS</b>	<b>\$0.00</b>	<b>\$315,441.84</b>	<b>\$315,441.84</b>	<b>\$315,441.84</b>	
<b>Fringe Benefits</b>	<b>\$0.00</b>	<b>\$36,587.67</b>	<b>\$36,587.67</b>	<b>\$36,587.67</b>	
<b>TOTAL SALARIES</b>	<b>\$308,238.15</b>	<b>\$1,007,800.93</b>	<b>\$1,089,217.57</b>	<b>\$1,093,288.40</b>	
<b>TOTAL DIRECT LABOR</b>	<b>\$388,380.07</b>	<b>\$1,224,401.96</b>	<b>\$1,326,986.93</b>	<b>\$1,332,116.18</b>	
<b>Contractual</b>					
<i>ACS Health Care , LLC</i>					
Hospital/Physician Initial Connection/Maintenance	* \$0.00	\$596,199.00	\$1,060,808.00	\$1,582,920.00	
Hospital/Physician Annual Licensing and Maintenance	* \$0.00	\$365,580.00	\$877,401.00	\$1,504,116.00	
Software License *	* \$0.00	\$93,900.00	\$182,603.00	\$186,548.00	
Hosting Services *	* \$0.00	\$187,800.00	\$355,858.00	\$363,546.00	
Professional Services *	* \$0.00	\$657,300.00	\$1,280,985.00	\$1,308,658.00	
<i>Other Contractual Services</i>					
Contractual Planning/Facilitation Services	\$218,000.00				
Contractual Outreach/Education	\$335,000.00				
<b>Total Contractual</b>	<b>\$553,000.00</b>	<b>\$1,900,779.00</b>	<b>\$3,757,655.00</b>	<b>\$4,945,788.00</b>	
<b>Other Direct Costs</b>					
Travel	\$24,979.41	\$15,000.00	\$15,000.00	\$15,000.00	
Equipment	\$16,562.34	\$100,000.00	\$0.00	\$0.00	
Supplies	\$14,533.74	\$24,000.00	\$12,000.00	\$0.00	
Other : Provider Assistance, Technical Training/Support		\$621,870.00	\$112,802.00	\$112,802.00	
<b>Total Other Direct Costs</b>	<b>\$56,075.49</b>	<b>\$760,870.00</b>	<b>\$139,802.00</b>	<b>\$127,802.00</b>	
<b>TOTAL DIRECT COSTS</b>	<b>\$997,455.56</b>	<b>\$3,886,050.96</b>	<b>\$5,224,443.93</b>	<b>\$6,405,706.18</b>	<b>\$16,513,656.63</b>
Indirect** @ 12.5% salaries	\$38,529.77	\$125,975.12	\$136,152.20	\$136,661.05	\$437,318.13
<b>TOTAL PROJECT COSTS</b>	<b>\$1,035,985.33</b>	<b>\$4,012,026.08</b>	<b>\$5,360,596.13</b>	<b>\$6,542,367.23</b>	<b>\$16,950,974.76</b>
* 2010 Costs covered by Medicaid Transformation Grant					
** The Cabinet for Health and Family Services Cost Allocation Plan is approved for indirect cost to be allocated monthly on an actual calculated basis.					

**GOEHI:** Included under the GOEHI category in the budget are costs for CHFS policy staff to support the KHIE.

**OATS:** Included under the OATS category in the budget are costs for CHFS technical staff to support the KHIE.

**Contractual:** Included under the ACS Health Care, LLC heading are the costs to support:

- 1) The initial connection and configuration for physicians and hospitals needing to connect to the KHIE via the edge server method.
- 2) The annual maintenance for hospitals and physicians to support the KHIE via the edge server method.
- 3) The annual software licensing costs for the ACS technical infrastructure
- 4) The annual hosting services costs for the ACS technical infrastructure
- 5) The annual cost for ACS professional services to support the KHIE

**Other Contractual Services** includes:

- 1) Cost for the vendor who performed the tasks related to facilitation of the KHIE Coordinating Council and Committees for the state HIE Strategic and Operational Plan
- 2) Costs for the outreach and educational tasks related to educating the healthcare community on the KHIE, including technical training and provider assistance to non-eligible providers

**Other Direct Costs** include:

- 1) Travel for internal staff and contractors related to required conferences and in-state travel to educate the healthcare community on the KHIE
- 2) Equipment for GOEHI and OATS staff and servers to support connecting CHFS public health programs to the KHIE
- 3) Supplies for GOEHI staff
- 4) Provider assistance and technical training and support to include:
  - The KHIE Connectivity Assistance Program to cover initial connectivity to the KHIE and maintenance, annual license and maintenance fees, software license, hosting services, and professional services
  - Development of interoperability between existing EMR systems and the KHIE for hospitals, safety net providers, and clinics



- Support for clinical laboratories and community pharmacies in medically underserved areas that otherwise would not have the capacity to support providers in achieving meaningful use

**Sustainability:** Development of the KHIE is supported by a \$4.9 million Medicaid Transformation Grant, which runs through March 31, 2011. The Commonwealth received ARRA funding through the State HIE Cooperative Agreement Program in the amount of \$9.75 million in February 2010. The period of performance for the Cooperative Agreement is thru February 7, 2014.

The Department for Medicaid Services (DMS) is closely coordinating the development of the State Medicaid Health Information Plan (SMHP) with GOEHI. In addition to being a collaborating partner, DMS is participating as a payor in the KHIE and will be submitting an Implementation Advance Planning Document (IAPD) to the Centers for Medicare/Medicaid Services that will describe how DMS plans to apply 90 percent of Federal financial participation (FFP) to the KHIE to support provider adoption of certified EMRs and promote health information exchange through 2021. The proposed use of FFP funds will be weighted and allocated according to the fair share principle.

The Business Development and Finance Committee of the KHIE Coordinating Council has been tasked with developing a plan that includes options for sustainability and potential public/private financing mechanisms to support HIE governance and operations beyond ARRA funding. Section B.1.2 of the Strategic Plan provides an overview of the process being employed by the Committee and identifies some of the Committee's findings to-date. The work plan describes action steps and a timeline leading to implementation of a revenue model to coincide with the start of the state fiscal year on July 1, 2012.

**Implementation:** Work Plan: A detailed work plan has been developed and is included in section B.1.2.1 (which directly follows this section). The work plan specifies the actions that will be undertaken and the timeline for completion. It includes cross references to ONC requirements specified in the Fund Opportunity Announcement (FOA) for each of the five domains that states are required to complete by the end of the second year of grant funding. It also specifies grantee requirements issued by ONC in March 2010 and in a July 6, 2010 Program Information Notice (PIN).

Six goals provide structure to the plan and focus attention on programmatic deliverables:

- A. Provide state level leadership at the executive level for electronic health information exchange
- B. Implement a multi-stakeholder process that includes Medicaid and Public Health representation and is transparent and representative of diverse stakeholders
- C. Coordinate statewide efforts to support meaningful use and assure that providers have access to at least one option for use in meeting stage 1 meaningful use requirements (with functionality incrementally developed thereafter to support the additional requirements that will be phased in to raise the bar for performance and quality)
- D. Assure trust of information sharing through the development of a privacy and security framework for State HIE efforts that aligns with the HHS HIT Privacy and Security Framework

- E. Support alignment of HIE with Medicaid, Public Health Programs, Behavioral Health and other federally funded state and local health care programs
- F. Ensure consistency of HIE services with national policies and standards

The goals align with ONC requirements and five functional areas of operational responsibility in the GOEHI: grant administration, procedures development for the KHIE, legal and policy development for the KHIE (and HIE in general), communication and outreach, and business development. The goals also align with the functional responsibilities of the Office of Administrative and Technology Services (OATS): KHIE Project Management, Technical Support and Vendor Management. (A GOEHI/OATS KHIE Project Management Organization Chart is in Appendix M.)

**Resources:** A Medicaid Transformation Grant in the amount of \$4.9 million was received by the Department for Medicaid Services to support the development of the KHIE. The KHIE project manager and technical team are in the OATS organization. In September 2009, the CHFS entered into contract with ACS State Health Care, LLC to develop the technical infrastructure to support the KHIE. (In the work plan, the term “vendor” is used to refer to ACS.) Additional staff support has been provided to the project through OATS and the Department for Medicaid Services to include project management support, interoperability and technical architecture support, resource management, and technical writing. Additional financial and programmatic support for the KHIE is anticipated to be from the Medicaid EHR Incentive Program, which provides 90 percent Federal financial participation for reasonable administrative expenses (following the fair share principle) related to the State’s efforts to serve as direct accelerant to the Medicaid Incentive Program and facilitate the adoption of certified EHR technology and health information exchange.

Executive level support has been provided by the Executive Director of OATS and the Deputy Executive Director of OATS/ CHFS CIO. The CHFS Chief Technical Architect has been actively involved in the technical design of the KHIE. Clinical consultation, including oversight for the development of the clinical guidelines for the KHIE, was provided by a senior-level policy analyst who holds a PhD in Nursing and a medical advisory group of six physicians and a pharmacist who are employees of the CHFS in the Departments for Medicaid, Public Health, Behavioral Health, and Commission for Children with Special Health Care Needs.

CHFS Secretary Janie Miller served as interim State HIE Coordinator from the time that GOEHI was created by Executive Order in August 2009 until the position was assumed by Jeff Brady in May 2010. During that time she provided leadership, policy support, and oversight for the HIE Cooperative Agreement. Secretary Miller also represented GOEHI at a number of national events staged by the National Governor’s Association and ONC. Additional support has been provided through the participation of the KHIE Coordinating Council and Committee members. This group includes clinicians; health IT professionals, including a number of healthcare CIOs, attorneys, healthcare executives, health IT vendors, safety net providers, educators, research and innovation, payors, the RECs, the RHIOs, State Hospitals, the Kentucky Medical Association, Hospital Association, and Pharmacy Association, etc.

As the statewide rollout of the KHIE occurs, a number of community-based resources will be engaged to support providers. This includes (but is not limited to): medical education and health

records administration training programs, HIT workforce development programs at the community colleges, public health and health informatics professionals, rural health development personnel, the AHECs, hospital and clinic IT personnel (including those from the FQHCs that have successfully implemented EMRs), etc. A number of other providers will be engaged to inform and educate the public and/or their constituent groups, including: healthcare provider organizations, USDA extension center health education program staff, local health department community-based health educators, etc. (The Accountability and Transparency Committee Findings and Recommendations report summary in the appendices includes a matrix and detailed description of resources and strategies to be used in educating providers and the public.) To the extent possible, GOEHI will attempt to capture the financial value of the services contributed by its partners, including the KHIE Coordinating Council and Committee members.

### **Dependencies:**

**Identified Dependencies, Risks and Mitigation Methods:** The KHIE vendor is responsible for developing risk management and contingency plans. The KHIE project manager is also required to identify potential risks and develop an approach to minimize the risk and ensure the availability of a contingency plan, as required by the Security Role of HIPAA.

### **Governance**

Interdependencies: Executive and legislative branch of state government; ONC and other federal health care programs (CMS, HRSA, CDC, etc.); a number of stakeholder groups; consumers; payors; healthcare providers and organizations; higher education; public health; Medicaid; other state funded health programs; agencies serving medically vulnerable populations, including the aging, disabled, and those with mental health challenges; local governments; health care CEOs and CIOs; health IT vendors, etc.

#### **Risks:**

- *Stakeholder representation:* GOEHI received far more applications than the number of openings on the Council and Committees; there is a risk all stakeholder groups will not be represented
- *Consumer participation:* Because there are so many stakeholders with diverse interests and only limited openings on the Council and Committees it can be problematic in terms of the number of consumers that you seat; there is also concern that vulnerable populations be represented since often their needs are very unique and challenging
- *Trust, neutrality, and balance:* The process of establishing a KHIE requires groups of competitors working together; these groups must establish trust and this process will require time
- As Chair of the Council and staff to the Committees, the GOEHI must maintain neutrality
- Maintaining “balance” is very important so that one group doesn’t exert too much control
- *Maintaining stakeholder engagement:* Participation must be meaningful in order to stay engaged

- *Buy-in at the highest level of the organization represented:* Do the Committee and Council members represent the interests and have the support of their top leadership?
- *Flexibility and adaptability:* Is the governance structure flexible, can it be changed?
- *Competition for members:* Are there similar groups that are also looking for members? Are members at risk for burn out because they're attending so many meetings?
- *Stability:* Will the group continue if there is an administration change?

Mitigation:

- Term limits are in place to allow more people to participate
- Stakeholder groups rotate
- Obtain consumer input and input from stakeholders through forums, key informant interviews, surveys, and other venues
- Use the services of an "outside" facilitator
- Clearly delineate what is expected of the members through the use of written charters
- Monitor participation levels and intervene when it appears to be dropping
- Assess the interests of the members and include items that are relevant to their needs and interests in charters and on the agenda
- Allow for flexibility to the extent possible to change; encourage members to participate in deciding what and how the changes should occur
- Coordinate meetings with other groups such as the RECs to minimize the demands on stakeholders
- Maintain documentation of the work that is done by the Council and Committees, demonstrate the value of the work of the Council and the wide stakeholder representation

## **Finance**

Interdependencies: Payors, Users, Consumers, Regulators, Other State Government Programs, including CHFS Programs, Legislators, ONC, Other Federal Funding Agencies, Employers

Risks:

- Value: Accelerated schedule doesn't allow time for users to realize value before being asked to contribute to sustainability
- Economic downturn: Difficult time to be asking for money from state government and stakeholders
- Uncertainty about the impact of health reform
- Lack of data: HIE is new; makes it difficult to project utilization that is required for forecasting potential revenues
- Competitive challenges: How to sustain multiple HIOs without multiple costs to users?
- Limited public models that demonstrate sustainability
- The potential for political backlash when instituting new fees
- Lack of funding to support CHFS interoperability and connectivity for health related programs

Mitigation:

- Maximize stakeholder input and participation in deciding on the sustainability model

- Demonstrate and communicate “quick-wins” that occur as a result of HIE; ask for feedback from users; share feedback with the community
- Demonstrate and quantify cost savings and cost avoidance
- Educate and inform stakeholders about health reform
- Talk to other HIEs to see if they can provide data
- Include other RHIOs in the discussion about sustainability and fees
- Educate lawmakers, stakeholders, and consumer groups—start early
- Seek grant opportunities, contact funders and ask their assistance in securing funding, educate program staff about HIE and the ways in which it can benefit their programs, identify priorities

### **Technical Infrastructure**

Interdependencies: EMR vendors and health IT vendors, hospital CIOs, RHIOs, NHIN, federal and state health care programs, clinics, certification and standards setting bodies, health IT workforce; end users; and payors.

#### **Risks:**

- Vendor failure to deliver on product
- Contractual barriers
- Systems at different levels of maturity—unable to exchange data
- Complexity
- Costs, including the possibility of price gouging at the local level by vendors
- Participation among smaller community hospitals and other organizations that may be eligible for provider incentives but are not financially positioned to assume the costs required to connect to the KHIE
- Participation among small community pharmacies, especially those in underserved areas for whom acquiring the capability to support e-prescribing is cost-prohibitive
- Participation by small independent labs, especially those serving underserved areas, for whom acquiring the capability to support electronic lab reporting is cost-prohibitive
- Technical support
- Participation among healthcare providers and organizations who are not eligible for the Provider Incentives Payment Program but who are important providers in the local/regional healthcare ecosystem but lack the resources required to purchase an EMR system and connect to the KHIE

#### **Mitigation:**

- Sound project management
- Change in approach vs. change in scope
- Offer multiple options to users
- Plan for users and technology at different levels on the readiness spectrum
- Keep it simple to the extent possible, plan to add functionality, enhance the technical architecture later, etc.

- Provide no-cost options to accelerate adoption and meaningful use, including an EMR “Lite” product and a provider portal to a virtual health record that provide the functionality to support stage 1 meaningful use
- Provide financial assistance for the start-up costs associated with interoperability and connectivity
- Provide financial assistance for licensing, maintenance and fees for a limited period during the implementation of the KHIE
- Consider the designation of a “special status” to vendors who demonstrate competency and agree to deliver services at a reasonable cost to providers and organizations
- Consider the costs beyond installation to KHIE and the user
- Consider the availability of technical support for the system implementation at the user level

### **Business and Technical Operations**

Interdependencies: CIOs, users, hospitals, providers, patients, ONC, payors, RECs, other groups that can assist in provider adoption and integration in the practice, CMS, Medicaid, Public Health, vendors, practice managers

#### **Risks:**

- Recruitment and retention of staff educated in and/or experienced in complex project management and electronic HIE
- Federal expectations for rapid development
- Focus on technical development without attending to the business side of HIE
- The state contracting process
- “Competitive” challenges

#### **Mitigation:**

- Plan personnel needs and develop a plan for filling positions quickly
- Consider contracting for staff in order to pay salaries comparable to market-rate
- Focus on providing options, plan outreach, have provider agreement ready, and keep it simple—the goal is to go-live and provide functionality to support stage 1 meaningful use
- Coordinate outreach and provider assistance with the RECs
- “Triage” order of priority for on-boarding and assisting
- Enlist the support of local users to act as “champions”
- Identify the kinds of policies and procedures that are needed and a plan/timeline for developing them that corresponds to the go-live date
- Plan ahead when contacts are involved and plan for contingencies
- Initiate dialogue with other RHIOs to plan for connectivity and exchange of clinical data, execute a written memorandum of understanding to “institutionalize” the process

### **Legal/Policy**

Interdependencies: Providers, hospitals, vendors, CHFS attorneys, attorneys, privacy and security officers, state and federal regulations, legislators, legislative liaisons, CHFS legislative staff

Risks:

- Providers refuse to sign agreement
- Delay in signing provider agreement, delays connectivity and throws off the implementation schedule causing inconvenience to other providers
- Change requested in provider agreement by one provider prompts another provider to rescind her agreement

Mitigation:

- Coordinate user's on-boarding to allow sufficient time to secure a signed provider agreement
- Establish a timeframe for signature; when it does not occur move on to the next entity for on-boarding
- Schedule time to allow for input when changes occur in the provider agreement; notify participants of the proposed change and when it will go into effect; provide an option for them to comment on the proposed change
- Secure the services of an external facilitator if negotiations are stalling

**Controls and Reporting:** GOEHI will comply with the HHS Administrative Requirements found in 45 CFR Part 74 and 92 and the Standard Terms and Conditions implemented through the HHS Grants Policy Statement; audit requirements as specified in Circular A-133; submit an annual Financial Status Report (SF-269) within 90 days of the end of each budget and project period; and provide semi-annual progress reports to ONC as directed.

GOEHI will comply with ARRA-specific quarterly financial and programmatic reporting, including the provision that quarterly reports must be submitted within 10 days of the end of the calendar quarter.

The CHFS has a mature financial management system to assure full compliance with federal funding requirements, meet federal reporting requirements, and comply with federal cash management requirements. The system has internal controls, audit features, and robust policies and procedures to guide the disbursement, accounting, and reporting of federal grant funds.

**Clinical Quality Improvement:** GOEHI is committed to the practice of continuous quality improvement. To this end, the work of an external evaluator, a clinical advisory workgroup, and the Accountability and Transparency Committee will inform the implementation of an ongoing quality improvement process. (Refer to Action Steps 2.4 -2.10 in the following work plan for a description of some of the processes that will be used.)



### B.1.2.1—WORK PLAN

<b>Goal 1.0</b> <b>Provide State Level Leadership at the Executive Level for Electronic Health Information Exchange</b>		
ONC Governance Domain Requirement (2009 FOA)	Appointment of a State Government HIT Coordinator who will coordinate state government participation in HIE; administer the State HIE Cooperative Agreement; and convene and chair a statewide HIE advisory group for the Kentucky Health Information Exchange (KHIE)	
	<b>ACTION REQUIRED</b>	<b>EXECUTION</b>
<i>Action Step 1.1</i>  ONC Governance Requirement G.1  ONC Business Requirement B.4	Develop the Governor's Office of Electronic Health Information, which was created by Executive Order in August 2009, to act in the capacity of the State Designated Entity, provide statewide leadership, coordinate HIE efforts across the Commonwealth; coordinate health information exchange across state government programs, state and federal healthcare programs; and, other public sector and private sector healthcare providers and organizations	Executive Director hired May 2010  Staff hired beginning June 16, 2010  Existing staff as of August 2010: Executive Director (1.0 FTE); Deputy Executive Director (1.0 FTE); Executive Secretary (1.0FTE); Staff Assistant (1.0 FTE); Legal Counsel (1.0 FTE); Internal Policy Analyst (2.0 FTE); Resource Management Analyst (1.0 FTE)
<i>Action Step 1.2</i>  ONC Business Requirement B.5  PIN July 6, 2010	Develop a comprehensive communications plan that identifies audiences and the strategies that will be employed to deliver education and information on an on-going basis through a concerted approach using multiple methods to sustain interest, communicate value, and provide avenues for obtaining additional information and/or support when appropriate [AT 2.0]	Accountability & Transparency Committee to identify and prioritize stakeholder groups; identify relevant communication vehicles and methods by July 16, 2010  GOEHI staff to use A&T Committee findings and recommendations to develop a detailed communications plan by December 1, 2010 that identifies strategies and a timeline for implementation
<i>Action Step 1.3</i>	Target communications efforts to: healthcare providers, hospitals, clinics, physicians, etc.; payors (health plans and other purchasers); healthcare information exchanges; and governmental entities and agencies [AT 1.0] [High Priority]	A & T Committee will be consulted throughout the plan's development and implementation  Communications plan will be presented to KHIE Coordinating Council for review and comment prior to January 1, 2011 implementation
<i>Action Step 1.4</i>	Target communication to: patients and consumers; health professional schools, universities, and colleges; and health information technology vendors [AT 1.0]  (Priority behind Step 1.4)	The development of the communications plan and implementation will be carefully coordinated with the State Medicaid Health IT Plan (SMHP) communications plan which is slated for completion on October 25, 2010

<b>Goal 1.0</b> <b>Provide State Level Leadership at the Executive Level for Electronic Health Information Exchange</b>		
<i>Action Step 1.5</i>	Maintain a comprehensive website ( <a href="http://chfs.ky.gov/os/goehi/">http://chfs.ky.gov/os/goehi/</a> ) to promote transparency, accountability, and serve as a reference point/clearinghouse for information about the KHIE and its governance, administration, and operations; meaningful use; resources and services, including the RECs and RHIOs	GOEHI staff  Ongoing
<i>Action Step 1.6</i>	Issue e-mail bulletins at least monthly using Gov.Delivery updating stakeholders about the KHIE, the KHIE Coordinating Council, and other information related to HIE and meaningful use	GOEHI staff  Implementation to begin by November 1, 2010
ONC Governance Domain Requirement (2009 FOA)	Ensure the coordination, integration, and alignment of efforts with Medicaid and public health programs through efforts of the State Health IT Coordinators	
<i>Action Step 1.7</i>  PIN July 6, 2010	State HIT Coordinator is a member of the Cabinet for Health and Family Services (CHFS) Secretary's Executive Staff as are the Commissioners of Medicaid Services and Public Health; this supports coordination of efforts across programs at the highest level	Ongoing
<i>Action Step 1.8</i>	Participate with the State Medicaid Program in the Regional CMS/ State Medicaid Directors Meaningful Use Workgroup	GOEHI Executive Director and staff participate in bi-weekly and/or monthly conference calls and technical assistance webinars
<i>Action Step 1.9</i>	Serve on the National Governor's Association HIT Advisory Committee	GOEHI Executive Director has been appointed to this Committee
ONC Business & Technical Operation Domain Requirement (2009 FOA)	Provide technical assistance as requested to HIOs and others developing HIE capacity within the state	
<i>Action Step 1.10</i>  ONC Business Requirement B.1	Engage in bi-weekly conference calls with the state's two RECs and HealthBridge, which is the state's fully operating RHIO, to coordinate technical assistance (Provision of technical assistance for HIE is also addressed under Goal 3.0)	GOEHI Executive Director – ongoing

<b>Goal 1.0</b> <b>Provide State Level Leadership at the Executive Level for Electronic Health Information Exchange</b>		
ONC Finance Domain Requirement (2009 FOA)	Develop the capacity to effectively manage funding necessary to implement the state Strategic Plan; this capacity should include establishing financial policies and implementing procedures to monitor spending and provide appropriate financial controls	
<i>Action Step 1.11</i>	All funds are administered in accordance with the State Government and CHFS financial management, accounting, and procurement guidelines/codes and policies and procedures, which include detailed internal controls and are subject to routine state audit	An experienced Resource Management Analyst (1.0 FTE) has been hired who has extensive state government experience. Position is supported by accounting and procurement staff from the Office of Administrative and Technology Services. Ongoing financial reporting will be the responsibility of the Internal Policy Analyst IV to be hired by 9/16/2010.  Ongoing
ONC Governance Domain Requirement (2009 FOA)	Account for the flexibility needed to align with emerging nationwide HIE governance that will be specified in future program guidance and with other federal programs	
<i>Action Step 1.12</i>  ONC Outcomes and Performance Measures Requirement O.2	Update Strategic and Operational Plan annually	Update to be done annually; beginning in February 2011; GOEHI will solicit Committee input in December/January annually; revise and submit State Plan to KHIE Coordinating Council for review in January of each year
<i>Action Step 1.13</i>  ONC Governance Requirement G.5 Training & Technical Assistance Requirement N.1	Participate in NHIN Governance Training	As requested by ONC
<i>Action Step 1.14</i>  Training & Technical Assistance Requirement N.2	Review updates to the Statewide HIE Toolkit modules	As new guidance is announced  KHIE Coordinating Council and Committees also will be advised of the updates and information posted on the KHIE Coordinating Council SharePoint site

<b>Goal 2.0</b> <b>Implement a Multi-Stakeholder Process that includes Medicaid and Public Health Representation and is Transparent and Representative of Diverse Stakeholders (PIN July 6, 2010)</b>		
ONC Governance Domain Requirement (2009 FOA)	Establish mechanisms to provide oversight and accountability of HIE to protect the public interest	
	ACTION REQUIRED	EXECUTION
<i>Action Step 2.1</i>  ONC Governance Requirement G.4  ONC Planning Requirement P.1, P.2	<p>Convene a statewide HIE Coordinating Council to serve as an advisory body for the KHIE</p> <p>KHIE Coordinating Council will meet no less than quarterly or more frequently as need is indicated</p> <p>Committee charters will be updated within 30 days of approval by ONC of the Strategic and Operational Plan align with the scope of work found in the State HIE Strategic and Operational Plan and other issues as deemed by the KHIE Coordinating Council; thereafter, Committee members will update their charters annually in conjunction with the annual update of the HIE Strategic and Operational Plan</p>	<ul style="list-style-type: none"> <li>February 23, 2010 - Administrative order creating the body signed</li> <li>March 2010 - Council and committee charters developed</li> <li>April 2010 - Open nominations process commenced</li> <li>May 28, 2010 - Administrative order appointing council and committee members executed</li> <li>May 28, 2010 - Orientation/Kick-Off meeting held</li> <li>May 28, 2010 to July 16, 2010 - Committee members developed findings and recommendations for use in developing the State HIE Strategic &amp; Operational Plan</li> <li>July 30, 2010 - Council reviewed and recommended adoption of Committee recommendations</li> <li>August 23, 2010 - Council reviewed State HIE Strategic and Operational Plan</li> </ul>
<i>Action Step 2.2</i>	Develop policies and procedures for the KHIE (Refer to Goal 4.0 Privacy & Security Framework for detailed description)	<p>KHIE Coordinating Council will advise GOEHI and assist in the development of policies and procedures</p> <p>Ongoing</p> <p>Refer to Goal 4.0 for detailed timeline and description of review and approval process</p>

<b>Goal 2.0</b> <b>Implement a Multi-Stakeholder Process that includes Medicaid and Public Health Representation and is Transparent and Representative of Diverse Stakeholders (PIN July 6, 2010)</b>		
<i>Action Step 2.3</i>	<p>Public reporting and the maintenance of transparency will be accomplished through the GOEHI website</p> <p>All Council and Committee meetings will conform to state open meetings requirements and be published on the GOEHI website as well as included in routine CHFS communications re: scheduled open meetings</p> <p>GOEHI policies and procedures and other information related to the operation of the KHIE that is not proprietary or does not compromise security will be posted to the GOEHI website</p>	<p>Ongoing</p>
<p>ONC Governance Domain Requirement</p>	<p>Set goals, objectives and performance measures for the exchange of health information that reflect consensus among health care stakeholder groups and that accomplish statewide coverage of all providers for HIE requirements related to meaningful use criteria</p>	
<p><i>Action Step 2.4</i></p> <p>ONC Outcomes &amp; Performance Measures Requirement 0.1</p> <p>PIN July 6, 2010</p>	<p>Develop performance benchmarks in conjunction with the development of the SMHP to cover all providers</p>	<p>To be developed by GOEHI staff in conjunction with Medicaid SMHP staff and vendor charged with developing SMHP forecasting methodologies</p> <p>Benchmarks will be developed and forwarded to the Accountability &amp; Transparency and Provider Adoption &amp; Meaning Use Committees for review by November 1, 2010; recommendations will be forwarded to the KHIE Coordinating Council for review and input by February 1, 2011</p>
<p>ONC Business &amp; Technical Operation Domain Requirement 2009 FOA &amp; B.3</p>	<p>Monitor and plan for remediation of the actual performance of HIE throughout the state ( and implement business processes to support clinical quality improvement)</p>	
<p><i>Action Step 2.5</i></p>	<p>Develop an integrated plan and timeline to guide implementation and reporting of surveys to capture perceived value, implementation feedback, adoption, meaningful use, and other performance measures for the State HIE Cooperative Agreement and the Medicaid State Health IT Plan (SMHP) [AT 5.0]</p>	<p>By October 15, 2010, GOEHI (with input from the RECs and the vendors responsible for the development of the SMHP and the evaluation of the Medicaid Transformation Grant (MTG)) will develop a detailed plan to survey stakeholders during roll-out of the KHIE and at six months following implementation</p>

<b>Goal 2.0</b> <b>Implement a Multi-Stakeholder Process that includes Medicaid and Public Health Representation and is Transparent and Representative of Diverse Stakeholders (PIN July 6, 2010)</b>		
<i>Action Step 2.6</i>	Administer surveys to obtain stakeholder input through a feedback loop that reinforces and builds on previous findings to obtain critical feedback during the implementation phase of the KHIE to evaluate: communications; perceived value and disadvantages of the KHIE; business processes positively impacted by the KHIE and other needs being met; and, needs which could be met by the KHIE [AT 3.1, 3.2]	<p>The proposed surveys will be coordinated with and to the extent possible build upon other survey activities including:</p> <p>Provider survey to be implemented during development of the SMHP by the vendor during September 2010, with the analyses to be completed by October 15, 2010</p> <p>Market research key informant interviews and surveys by the Business Development &amp; Finance Committee during January – March 2011</p>
<i>Action Step 2.7</i>	Survey a random sample of users six months after implementation to determine how well the KHIE meets the stakeholders' needs [AT 4.0]	<p>Hospital surveys by the KHIE vendor who will be administering a readiness questionnaire with each hospital during roll-out of the KHIE through September 2011</p> <p>Surveys and focus groups of KHIE pilot hospitals and clinic site that are being done in conjunction with the MTG evaluation through March 2011</p>
<i>Action Step 2.8</i>	Convene a clinical advisory workgroup to evaluate improvements of clinical outcomes for patients, including the impact of provider use of the KHIE on selected diagnoses by measuring clinical outcomes [AT 4.4] [PA 5.0]	Workgroup will be convened by GOEHI no later than January 15, 2011 to inform the updating of the annual plan during February 2011 and to serve in an advisory capacity during evaluation of the KHIE
<i>Action Step 2.9</i>  ONC Outcomes & Performance Measures Requirement O.1	Conduct an evaluation of the KHIE, which includes annual reports as well as an end-of-project report	Contingent upon the successful completion of the MTG KHIE pilot evaluation, GOEHI will modify the vendor contract to include continuation of the KHIE evaluation with a written report to be prepared and submitted to GOEHI by March 15 for each of the remaining 3 project years (subject to annual renewal) (Decision regarding contract renewal will be made by April 1, 2011)
ONC Business & Technical Operation Domain Requirement	Document how the HIE efforts within the state are enabling meaningful use	

<b>Goal 2.0</b> <b>Implement a Multi-Stakeholder Process that includes Medicaid and Public Health Representation and is Transparent and Representative of Diverse Stakeholders (PIN July 6, 2010)</b>		
<i>Action Step 2.10</i>	Develop and measure performance benchmarks annually during the update of the State HIE Strategic and Operational Plan with a written report of the progress toward meaningful use posted to the GOEHI website	<p>To be developed by GOEHI staff in conjunction with Medicaid SMHP staff and vendor charged with developing SMHP forecasting methodologies</p> <p>Benchmarks will be developed and forwarded to the Accountability &amp; Transparency and Provider Adoption &amp; Meaning Use Committees for review by November 1, 2010; recommendations will be forwarded to the KHIE Coordinating Council for review and input by February 1, 2011</p>
<i>Action Step 2.11</i>  ONC Finance Requirement F.1	<p>Conduct an evaluation of the KHIE by an external vendor to include (but not limited to):</p> <ul style="list-style-type: none"> <li>• Medicaid claims data analysis to assess implementation/use; clinical &amp; economic outcomes</li> <li>• Data access tracking logs to assess implementation/use; clinical outcomes</li> <li>• Continuity of care document analysis to assess implementation/use; clinical &amp; economic outcomes</li> <li>• Workflow/process analysis to assess implementation/use; economic outcomes</li> <li>• Clinician survey to assess implementation/use; clinical &amp; economic outcomes</li> <li>• Focus groups to assess implementation/use; clinical &amp; economic outcomes</li> </ul> <p>The written evaluation report will be posted to the GOEHI website</p> <p>Findings also will be used by the Business Development and Finance Committee to assess how the State may use state purchasing power to enhance the demand for care coordination and HIE in building sustainability (Refer to Action Step 2.15)</p>	<p>External evaluation of the Medicaid Transformation Grant funded KHIE pilot is underway. A written report will be provided to the Department for Medicaid Services (DMS) on or before March 15, 2011</p> <p>Contingent upon the successful completion of the MTG KHIE pilot evaluation, GOEHI will modify the vendor contract to include continuation of the KHIE evaluation with an written report to be prepared and submitted to GOEHI by March 15 for each of the remaining 3 project years (subject to annual renewal) (Decision regarding renewal will be made by April 1, 2011)</p> <p>The Accountability and Transparency Committee and Clinical Advisory workgroup will serve in an advisory capacity to the evaluation vendor</p>



<b>Goal 2.0</b> <b>Implement a Multi-Stakeholder Process that includes Medicaid and Public Health Representation and is Transparent and Representative of Diverse Stakeholders (PIN July 6, 2010)</b>		
<i>Action Step 2.12</i>  Outcomes & Performance Measures Requirement O.3	Participate in ONC evaluation of the State's implementation and outcomes for the State HIE Cooperative Agreement	As determined by ONC
ONC Finance Domain Requirement	Develop a path to sustainability including a business plan with feasible public/private financing mechanisms for ongoing information exchange among health care providers and with those offering services for patient engagement and information access	
<i>Action Step 2.13</i>  ONC Finance Requirement F.2	Develop an annual business plan that addresses the potential for risk and projects revenues and expenses based on projected levels of HIE and related services utilization, and revenue sources [BF 4.0]	Draft to be prepared by the Business Development and Finance Committee with the assistance of GOEHI and OATS and presented to the KHIE Coordinating Council for review and comment no later than January 10, 2011 for inclusion in the annual update of the State HIE Strategic and Operational Plan (to be updated annually thereafter)
<i>Action Step 2.14</i>	Conduct key informant interview, surveys, and other market research to identify the product market for HIE services, including the types of services that might be provided as value added services [BF 1.0] [BF 5.0]	To be conducted by the Business Development & Finance Committee in collaboration with the GOEHI staff (and coordinated with other KHIE-related survey activity); the surveys are expected to be done during January 2011-March 2011; written summary of findings to be completed by May 1, 2011
<i>Action Step 2.15</i>	Develop a pro forma budget* and revenue projections for the KHIE for the 3 <sup>rd</sup> project year and subsequent years thereafter to plan for sustainability beyond the availability of federal grant funds based on a number of potential revenue sources and mixes to assess feasibility and evaluate options [BF 3.0]	Pro Forma budgets* prepared with various revenue options for ongoing sustainability to be developed by the Business Development and Finance Committee with the assistance of GOEHI and OATS staff by June 1, 2011  Budgets and options to be presented to the KHIE Coordinating Council for review and comment by July 1, 2011; stakeholder comment received by the KHIE Coordinating Council through July 31, 2011  KHIE Coordinating Council recommends revenue model to GOEHI and the CHFS Secretary by August 31, 2011  Note*: To include plans for sustainability of any directories or authentication services offered by the KHIE (PIN July 6, 2010)

<b>Goal 2.0</b> <b>Implement a Multi-Stakeholder Process that includes Medicaid and Public Health Representation and is Transparent and Representative of Diverse Stakeholders (PIN July 6, 2010)</b>		
<i>Action Step 2.16</i>	Implement a revenue model that is supported across stakeholder groups with payments proportional to the value they receive from the HIE [BF 2.0] [BF 5.0]	Plan developed by October 1, 2011 outlining action steps required to implement the revenue model to coincide with the start of the state fiscal year on July 1, 2012
<i>Action Step 2.17</i>	Develop a communications plan to secure stakeholder support and buy-in for the business plan, including user fees and/or other assessments	Developed as part of the implementation plan for the revenue model
<i>Action Step 2.18</i>	Develop the administrative policies and procedures, including required regulatory actions, to implement and manage the business model	Action steps and timeline to be developed as part of the implementation plan for the revenue model
<i>Action Step 2.19</i>	Research grants and other funding opportunities to expand the KHIE (including the addition of value added services) and/or support ongoing operations	Ongoing

<b>Goal 3.0</b> <b>Coordinate Statewide Efforts to Support Meaningful Use and Assure that Providers have Access to at least One Option for Use in Meeting Stage 1 Meaningful Use Requirements with Functionality Incrementally Developed thereafter to support the additional Requirements that will be phased in to raise the Bar for Performance and Quality (PIN July 6, 2010)</b>		
ONC Technical Infrastructure Domain Requirement	Develop or facilitate the creation of a statewide technical infrastructure that supports statewide HIE to include: eligibility & claims transactions; electronic prescribing & refill requests; electronic clinical laboratory ordering & results delivery; electronic public health reporting (i.e., immunizations, notifiable laboratory results); quality reporting; prescription fill status and/or medication fill history; clinical summary exchange for care coordination and patient engagement	
	ACTION REQUIRED	EXECUTION
PIN July 6, 2010	Conduct Gap Analysis	
<i>Action Step 3.1</i>	Conduct statewide gap analysis of existing data sources, surveys, etc. to develop an overview of the current HIE activities within the state including the penetration of electronic lab delivery, e-prescribing networks and other existing HIE solutions	Completed October 2009; updated August 2010 in conjunction with development of the State HIE Strategic and Operational Plan  Provider Adoption & Meaningful Use Committee provided qualitative information to supplement quantitative analysis and developed a set of recommendations on June 29, 2010, which have been incorporated in the State Plan
<i>Action Step 3.2</i>	Document baseline findings for: <ul style="list-style-type: none"> <li>• % pharmacies accepting electronic prescribing &amp; refill requests</li> <li>• % clinical laboratories sending results electronically</li> <li>• % health plans supporting electronic eligibility and claims transactions</li> <li>• % health departments receiving immunizations, syndromic surveillance, and notifiable laboratory results</li> </ul>	Completed August 2010 in conjunction with development of the State HIE Strategic and Operational Plan; findings are summarized in the Plan
<i>Action Step 3.3</i>	Share findings with the KHIE Coordinating Council & Committees and use in developing the statewide plan for the development of the technical infrastructure and to plan for the roll-out of the KHIE	May 28, 2010 KHIE Coordinating Council and Committee Orientation & Kick-Off and July 30, 2010 KHIE Coordinating Council meeting

<b>Goal 3.0</b> <b>Coordinate Statewide Efforts to Support Meaningful Use and Assure that Providers have Access to at least One Option for Use in Meeting Stage 1 Meaningful Use Requirements with Functionality Incrementally Developed thereafter to support the additional Requirements that will be phased in to raise the Bar for Performance and Quality (PIN July 6, 2010)</b>		
<i>Action Step 3.4</i>	Participate in the design and implementation (and analyses of findings) of the statewide environmental scan to be conducted in conjunction with development of the Medicaid State Health Information Technology Plan (SMHP)	SMHP vendor selected through open procurement August 2010; GOEHI will collaborate with Department for Medicaid Services & Office of Administrative & Technology Services in the completion of the following activities: <ul style="list-style-type: none"> <li>• August 20, 2010 - Development of methodology &amp; survey instruments</li> <li>• August 25, 2010 - Determination of sample size and selection of representative sample</li> <li>• August 31, 2010 - Distribution of survey instruments and</li> <li>• September 29, 2010 - Survey closed</li> <li>• October 15, 2010 - Analysis completed</li> </ul>
<i>Action Step 3.5</i> ONC Business & Technical Requirement B.2	GOEHI, the KHIE Coordinating Council & Committees will use findings from the SMHP environmental scan to coordinate efforts with Medicaid and to update the State HIE Plan	December 2010 – January 2011 Council & Committee Review; State HIE Plan Update by GOEHI in collaboration with OATS, Department for Medicaid Services, Department for Public Health, and the State's two RECs (Updated plan submitted to ONC in February 2011)
ONC Business and Technical Operations Domain Requirement	Coordinate and align efforts to meet Medicaid and public health requirements for HIE and evolving meaningful use criteria including enabling electronic meaningful use and clinical quality reporting to Medicaid and Medicare; and, build capacity of public health systems to accept electronic reporting of immunizations, notifiable diseases and syndromic surveillance from providers	
PIN July 6, 2010	Set Strategy to Meet Gaps in HIE Capabilities for Meaningful Use	
<i>Action Step 3.6</i>  ONC Technical Infrastructure Requirement T.1, T.2, T.3, T.4  PIN July 6, 2010	Build technical infrastructure to support statewide health information exchange to fill the gap in HIE access and support meaningful use	State secured a Medicaid Transformation Grant to support development of technical infrastructure to support statewide HIE that is open to all healthcare providers and organizations  Contract executed with ACS Healthcare in September 2009 (Discussed in greater detail in the Plan's narrative & timeline/action steps described below)
<i>Action Step 3.7</i>	Establish connectivity between HealthBridge and the KHIE	Memorandum of Understanding signed between KHIE and HealthBridge on January 29, 2010 to pursue connectivity  Monthly calls are ongoing

PIN July 6, 2010	Focus and prioritize activities to make rapid progress to help state providers meet stage 1 meaningful use requirements	
<i>Action Step 3.8</i>	<p>Expedite deployment of the KHIE</p> <p>Expand KHIE technical architecture to offer more options for providers and hospitals to include:</p> <ul style="list-style-type: none"> <li>• Virtual Private Network (VPN) connectivity</li> <li>• EMR-Lite</li> <li>• Provide fully operational provider portal to a virtual health record</li> </ul>	<ul style="list-style-type: none"> <li>• October 2010 - Begin implementation</li> <li>• October 2010 - Installed and validated</li> <li>• October 2010 - VPNs established between pilot sites (5 hospitals*, 1 clinic, State Public Health Lab and at least one commercial lab)</li> <li>• October 2010 - Production of HIE Framework and Production Edge Services installed and validated</li> <li>• December 2010 - Production QA completed for first pilot users group (MPI, ADT, Lab, Radiology, Transcribed Reports)</li> <li>• December 2010 - QA live data feeds: exchange live, push and pull of data</li> <li>• January 2011 - Go-Live Statewide</li> </ul> <p>Note*: the 6<sup>th</sup> hospital Pikeville Medical Center, which went live April 1, 2010, and Passport Medicaid Managed Care Plan will continue to access Medicaid claims CCD data through the original KHIE web-based connectivity developed by ACS at “silver” level and transition to the “gold” level (when it is approved on or before December 15, 2010)</p>
<i>Action Step 3.9</i>	<p>Pilot KHIE with up to 20 physician practices using the EMR-Lite product</p> <p>Pilot KHIE with up to 20 physician practices affiliated with Pilot hospitals using third party EMR TBD</p>	<p>Physician practices recruited and selected by August 26, 2010</p> <p>Physician practices affiliated with pilot hospitals and using HIE Network</p> <p>EMR-Lite go-live October 2010</p> <p>Interoperability development starts October 2010 with practices using third party EMR</p> <p>Physician practices with third party EMRs go-live November 2010</p>
<i>Action Step 3.10</i>	<p>Outreach, Orientation, Rapid Deployment (OORD) for enrollment and connectivity to KHIE over 4-5 weeks for each group (8-10 hospitals per group) targeting approximately 2 hospitals per week and the providers in the hospital’s service area; the process as described in State Plan narrative consists of the following steps:</p> <ul style="list-style-type: none"> <li>• Outreach, Engagement, KHIE Orientation</li> </ul>	OORD Group 1—December 15, 2010
		OORD Group 2—January 15, 2011
		OORD Group 3—February 15, 2011
		OORD Group 4—March 15, 2011

	<p>(GOEHI staff, OATS, RECs)</p> <ul style="list-style-type: none"> <li>• KHIE Options described (GOEHI, OATS)</li> <li>• Services &amp; Supports (including Provider Incentive Payments Program described and other services/supports through the REC &amp; GOEHI (DMS, GOEHI, RECs,))</li> <li>• Provider Agreement signed (GOEHI staff)</li> <li>• Readiness Assessment completed (provider)</li> </ul> <p>Option A: Connectivity to the KHIE if provider has current capability to send and receive a CCD  Option B: Deferred connectivity—identify actions required for system /interoperability connectivity to the KHIE &amp; a timetable for connection (in the interim provider may elect to use Option C or D depending on their timetable for system’s connectivity)  Option C: Use of the KHIE provider portal to the virtual health record  Option D: Use of the EMR “Lite” product</p>	OORD Group 5—April 15, 2011
		OORD Group 6—May 15, 2011
		OORD Group 7—June 15, 2011
		OORD Group 8-July 15, 2011
		OORD Group 9—August 15, 2011
		OORD Group 10—September 15, 2011
		OORD Group 11—October 15, 2011
		OORD Group 12—December 15, 2011
		Ongoing outreach and provider education will occur with priority given to regions/communities with low response/participation following first round of OORD –priorities to be determined and action plan to developed during January 2012 in conjunction with annual update of HIE Strategic and Operational Plan
<i>Action Step 3.10.1</i>	Develop policies and procedures, including eligibility criteria and other guidelines for administration/operation of the State HIE Provider Assistance Program (as described in action steps 3.10.2-4)	<p>GOEHI will take the lead with input from DMS, OATS and the RECS</p> <p>Begin development by October 2010 with policies and procedures in place by December 15, 2010</p>
<i>Action Step 3.10.2</i>	Develop guidelines for provider/hospital participation in the KHIE Connectivity Assistance Program (CAP) which will cover the following costs: initial connectivity to the KHIE & maintenance; annual license & maintenance fees; software license; hosting services; and professional services	
<i>Action Step 3.10.3</i>	Financial assistance to support interoperability between existing EMR systems and the KHIE for hospitals, safety net providers, and clinics; eligibility criteria will be needs-based	

<i>Action Step 3.10.4</i>	Assistance to clinical laboratories and community pharmacies who otherwise would not have the capacity to support providers in achieving meaningful use; eligibility criteria will be needs-based with priority give to those serving medically underserved areas	
<i>Action Step 3.11</i>	Hospitals systems are connected to the KHIE <ul style="list-style-type: none"> <li>• CAP agreement signed for those hospitals wanting KHIE to share the costs</li> <li>• Interface requirements determined (vendor)</li> <li>• Interfaces developed (vendor and provider)</li> <li>• Hardware &amp; software installed (vendor and provider)</li> <li>• Interface testing (vendor and provider)</li> <li>• Validation &amp; Go-live (vendor and provider)</li> <li>• Training (Vendor)</li> <li>• Help Desk (Vendor)</li> </ul>	GOEHI and OATS with Vendor Beginning April 1, 2011
<i>Action Step 3.11.1</i>	Hospitals are connected to KHIE for bi-directional exchange	7 new hospitals are connected to the KHIE during the period from April 1, 2011- August 31, 2011
<i>Action Step 3.11.2</i>	Hospitals are connected to KHIE for bi-directional exchange	8 new hospitals are connected to the KHIE during the period from September 1, 2011- August 31, 2012
<i>Action Step 3.11.3</i>	Hospitals are connected to KHIE for bi-directional exchange	27 new hospitals are connected to the KHIE during the period from September 1, 2012- August 31, 2013
<i>Action Step 3.11.4</i>	Hospitals are connected to KHIE for bi-directional exchange	15 new hospitals are connected to the KHIE during the period from September 1, 2013 – August 31, 2014
<i>Action Step 3.11.5</i>	Hospitals are connected to KHIE for bi-directional exchange	44 new hospitals are connected to the KHIE during the period from September 1, 2014 – August 31, 2015
PIN July 6, 2010	Capacity for E-Prescribing in 2011	
<i>Action Step 3.12</i>	The KHIE Exchange Framework supports e-prescribing	Core service of the KHIE available at go-live date for users
PIN July 6, 2010	Capacity to Receive Structured Lab Results in 2011	
<i>Action Step 3.13</i>	Connectivity and capacity for the State Public Health Lab to support bi-directional exchange is under development and near completion	Connectivity to the KHIE for bi-directional exchange established by October 6, 2010



<i>Action Step 3.13</i>	KRS 333.150 revised during 2010 Kentucky General Assembly to permit medical laboratory results to be transmitted to an electronic health information exchange or network specified for purposes with patient consent and in compliance with HIPAA	January-March 2010 Session; revision went into effect July 2010
<i>Action Step 3.14</i>	The KHIE Exchange Framework supports laboratory e-ordering and response	Core service of the KHIE available at go-live date for users
<b>PIN July 6, 2010</b>	<b>Capacity to Share Patient Care Summaries Across Unaffiliated Organizations in 2011</b>	
<i>Action Step 3.15</i>	<p>The HIE Framework supports exchange of patient information via HL7 v2 through which clinical messages can be sent and received; it does not, at present, support a CCD</p> <p>The KHIE framework architecture supports the user in extracting, storing, and viewing a CCD in a viewer; however, many EHRs are not mature enough, at present, to handle CCD's</p> <p>The Exchange Hub will be configured to send patient data to an KHIE repository which will contain all available patient data regardless of entry point (maximum retention of 24 hours) and orchestrate production of a CCD which will be sent to the requesting user through the KHIE Framework Exchange Hub (See Stage 2 graphic)</p>	By December 15, 2010, connectivity of the KHIE web-based HIE framework to the a VPN environment will support the extraction, storing, and viewing of a complete patient summary (CCD) for all KHIE users
<b>PIN July 6, 2010</b>	<b>Capacity of Public Health Systems to Accept Electronic Reporting of Immunizations, Notifiable Diseases and Syndromic Surveillance Reporting from Providers over the course of the project</b>	
<i>Action Step 3.16</i>	<p>Immunization Registry</p> <p>The statewide immunization registry is maintained by the Department for Public Health and its connectivity with the KHIE is currently in the pilot stage. (August 2010)</p>	Connectivity to the KHIE with the capacity to support bi-directional information flow to the KHIE by October 30, 2010

<i>Action Step 3.17</i>	<p>Notifiable &amp; Syndromic Surveillance Reporting</p> <p>Standardize electronic laboratory and morbidity reports for 12 reportable diseases against the NEDSS base system application vocabulary, version 3. The harmonization step will allow any receiving system that can recognize NBS concepts to accurately interpret the content of the message and act on it appropriately. This will support the electronic exchange of notifiable and syndromic surveillance using the KHIE framework.</p>	<ul style="list-style-type: none"> <li>• November 31, 2010 contracts executed</li> <li>• March 1, 2011 50% of ELR reports from target hospital laboratories will be consistent with NEDSS base application vocabulary, version 3</li> <li>• July 31, 2011 100% of ELR reports from target hospital laboratories are consistent with NEDSS base application vocabulary, version 3</li> <li>• April 1, 2011 50% of ELR reports from target hospital laboratories have passed the CDC PHIN VADS validation process built-in to the DPH Orion Rhapsody interface engine</li> <li>• August 1, 2011 100% of ELR reports from target hospital laboratories have passed the CDC PHIN VADS validation process built-in to the DPH Orion Rhapsody interface engine</li> </ul>
	Provide a Patient Portal	
<i>Action Step 3.18</i>	Continue development on a web-based patient portal as specified in the ACS scope of work	Patient Portal to be available statewide by December 2011
<i>Action Step 3.19</i>	Use the mass media to communicate the value of the HIE to consumers and encourage and support use of the KHIE patient portal to create an entire state of activated patients [PA 16.0]	Refer to Action Steps 1.2-1.4
	Implement a Patient Consent Model	
<i>Action Step 3.20</i>	Develop an “Opt-Out” model for patient consent [PS 1.0]	Refer to Action Step 4.14
<p>ONC Technical Infrastructure</p> <p>Domain Requirement</p>	Develop or facilitate the creation and use of shared directories and technical services, as applicable for the state’s approach for statewide HIE; shared services may include but are not limited to: patient matching, provider authentication, consent management, secure routing, advance directives and messaging	

<p><i>Action Step 3.21</i></p> <p>ONC Technical Infrastructure Requirement T.1</p> <p>PIN July 6, 2010</p>	<p>The KHIE's directories and technical services are available to other HIEs which connect to the KHIE</p> <p>In addition to a Master Patient Index (MPI) and Record Locator Service (RLS)</p> <p>The KHIE Exchange Framework includes:</p> <ul style="list-style-type: none"> <li>• Exchange/Clinical Messaging</li> <li>• EMR-Lite</li> <li>• e-order (lab order/response)</li> <li>• e-prescribing</li> <li>• Provider portal to a virtual health record</li> </ul> <p>The KHIE Framework will also include:</p> <ul style="list-style-type: none"> <li>• Clinical Rules</li> <li>• Comprehensive Patient Care Summary</li> <li>• Medicaid claims data (currently up to 2 years; goal is 5 years)</li> </ul> <p>The framework will support consent management which is expected to be added later (Refer to Action Step 4.14)</p>	<p>Ongoing once the KHIE is Go-Live</p>
ONC Technical Infrastructure Domain Requirement	Leverage existing regional and state level efforts and resources that can advance HIE	
	Broadband Access	
<i>Action Step 3.22</i>	Assess the needs of the healthcare providers and organizations in securing high speed Internet access as part of the SMHP environmental analysis [PA 14.0]	Refer to the Department for Medicaid Services and the SMHP vendor for consideration in developing the survey instrument that will be used during the September 2010 assessment
<i>Action Step 3.23</i>	Evaluate the provisions and pricing structure of the Kentucky Information Highway (KI2) contract to identify how it might be used to support access to increased bandwidth for the medical community, including private for-profit practices [PA 15.0]	Refer to the Department for Medicaid Services and the SMHP vendor for evaluation as a potential strategy during the SMHP's development in October 2010

<i>Action Step 3.24</i>	Monitor the Federal rulemaking for the USAC (Universal Service Administration Company) FCC National Broadband Plan that goes into effect in 2011 and recommend that the KIH2 contract be brought in-line with the new pricing structure [PA 18.0]	GOEHI Ongoing
	IT Workforce	
<i>Action Step 3.25</i>	Assess the availability of local/regional IT support and report these findings to the Council on Postsecondary Education and the Kentucky College and Technical College System [PA 8.0]	GOEHI refer to the RECs for discussion and development of a strategy to assess and/or monitor the availability and gaps in local/regional IT support Fall 2010
<i>Action Step 3.26</i>	Invite the respective KCTCS HIT workforce development programs to participate in the planning and implementation of the KHIE regional outreach and connectivity efforts	GOEHI and the RECs Ongoing
	Support for Provider Adoption & Meaningful Use	
<i>Action Step 3.26</i>  PIN July 6, 2010	Work closely with the Commonwealth's two RECs and RHIOs to coordinate efforts with the various stakeholder organizations; avoid duplication; monitor provider adoption & meaningful use; and coordinate resources [PA 1.0] [PA 19.0]	Monthly calls are held with the RECs to coordinate efforts Ongoing  Provide regularly scheduled updates to the Provider Adoption & Meaningful Committee & KHIE Coordinating Council
<i>Action Step 3.27</i>	Employ a systems approach to capitalize on existing referral networks when conducting outreach while coordinating efforts with the RECs  Prioritize larger hospitals and regional medical centers, affiliated primary care practices, and their referring community hospitals when establishing connectivity [PA 5.0, 6.0, 7.0]	Ongoing Effective August 2010  Note: Provider outreach to target hospitals, physicians, other providers eligible for incentive payments, providers and organizations not eligible for provider incentive payments, laboratories, and community pharmacies (Prioritization Method is described in the Strategic Plan)

<i>Action Step 3.28</i>	Coordinate adoption assistance and connectivity to the KHIE with the RECs for eligible primary care providers through joint planning activities and regularly scheduled meetings between GOEHI and the RECs; routinely consult and coordinate with the Kentucky Medical Association, Dental Association, Optometric Association, Chiropractic Association, Nurses Association, Kentucky Pharmacists Association, etc. and support widespread dissemination of resources that educate and direct providers to the RHIO's, RECs and other sources of information [PA 1.0, 2.0, 9.0, 12.0]	Ongoing Effective August 2010
<i>Action Step 3.29</i>  PIN July 6, 2010	In conjunction with development of the SMHP, develop a plan and identify strategies for assisting non-eligible providers in achieving adoption and meaningful use [PA 3.0]	GOEHI will collaborate with the Department of Medicaid Services and OATS in the development of the SMHP in November 2010  Seek input from KY Medical Association, KY Hospital Association
<i>Action Step 3.30</i>	Document the extent to which non-eligible provider organizations such as rehabilitation hospitals, behavioral health in-patient and out-patient facilities, long term care facilities, home health agencies, hospice, and other non-eligible health care providers have adopted EMRs and are engaging in HIE  Identify ways in which the use of the provider portal and the EMR-Lite could be used to coordinate care with the patient's PCP and other healthcare providers and promote the use of these products among those without an EMR [PA 3.0]	To be completed during the third project year prior to the annual update of the State HIE Strategic and Operational Plan during December 2012-2013  GOEHI as the lead working in collaboration with the RECs and professional organizations and providers representing the needs and interests of non-eligible providers, including the state department for aging services, public health departments, community mental health centers, etc.
<i>Action Step 3.31</i>  <i>Corresponds to Action Step 2.8</i>	Involve physicians through the establishment of a clinical advisory workgroup in determining the information they receive through the KHIE and the functionality that is needed to support their practices, including advanced clinical decision support and care management tools as a service of the HIE  [PA 4.0, 13.0]	Workgroup will be convened by GOEHI no later than January 15, 2011 to inform the updating of the annual plan during February 2011 and to serve in an advisory capacity during evaluation of the KHIE

<i>Action Step 3.32</i>	Support the use of evidence-based practices by physicians during the planning and implementation of EMR systems by links on the GOEHI website to the RECs, Agency for Healthcare Research and Quality (AHRQ), and other sites [PA4.0]	Ongoing
<i>Action Step 3.33</i>	Enlist the support of existing resources such as the Area Health Education Centers (AHECs) and undergraduate and graduate, medical, nursing, and other health professions education programs during the implementation of the KHIE regionally to support local providers [PA 10.0]	Ongoing  To be coordinated with the RECs
<i>Action Step 3.34</i>	Enlist the support of, coordinate efforts, and share information with state and local associations for practice managers and health data professionals [PA11.0]	Ongoing  To be coordinated with the RECs

<b>Goal 4.0</b> <b>Assure trust of information sharing through the development of a privacy and security framework for State HIE efforts that aligns with the HHS HIT Privacy and Security Framework (PIN July 6, 2010)</b>		
ONC Legal & Policy Requirement L.2	Develop a privacy and security framework that supports incremental development of HIE policies over time, enables appropriate inter-organizational HIE, and meets other important state policy requirements such as those related to public health and other vulnerable populations	
	<b>ACTION REQUIRED</b>	<b>EXECUTION</b>
<i>Action Step 4.1</i>	Develop policies and procedures for preserving the privacy and security of health data exchanged through the KHIE to assure compliance by the KHIE and its subcontractors with the standards of HIPAA Privacy and Security Rules applicable to Business Associates of HIPAA covered entities [PS 2.0]	GOEHI staff , with input from the CHFS Privacy and Security Counsel, will draft policies and procedures by February, 2011  Review by the Privacy and Security Committee and KHIE Coordinating Council by April 1, 2011
<i>Action Step 4.2</i>	Develop policies and procedures to address: positive patient identification for data returned to the requestor; standards for establishing data elements required as part of the request process; standards for identifying provider of patient data (source); encryption of data in transit and during vendor caching for the HIE; standards that define participant's responsibilities in dealing with identifying internal uses of HIE data; Master Patient Indexing standards; and timing and procedures related to caching of data [PS 2.1]	OATS staff will draft policies and procedures (a number of which have already been developed as technical specifications for the KHIE) in consultation with GOEHI staff , the KHIE vendor with input from the Privacy & Security and the Interoperability & Standards Committees  Draft policies and procedures by February, 2011 Review by the Privacy & Security and Interoperability & Standards Committees and the KHIE Coordinating Council by April 1, 2011
ONC Legal & Policy Requirement L.3	Implement enforcement mechanisms and have appropriate safeguards in place to protect health information	
<i>Action Step 4.3</i>	Develop policies and procedures to manage breaches and misuse of health information [PS 3.0]	GOEHI staff will draft policies and procedures with input from CHFS Privacy and Security Officers and the Privacy & Security Committee by July 1, 2011  Review by the KHIE Coordinating Council by September 1, 2011
<i>Action Step 4.4</i>	Develop policies and procedures to address enforcement obligations [PS 3.1]	
<i>Action Step 4.5</i>	Develop policies and procedures to encourage participants to notify the KHIE of known inaccuracies and mismatches of data shared through the KHIE [PS 3.7]	



<b>Goal 4.0</b> <b>Assure trust of information sharing through the development of a privacy and security framework for State HIE efforts that aligns with the HHS HIT Privacy and Security Framework (PIN July 6, 2010)</b>		
ONC Legal & Policy Domain Requirement	Minimize obstacles in data sharing agreements	
<i>Action Step 4.6</i>	Consider the Participation Agreement as a living document that will be modified as necessary to: implement changes to the initially contemplated structure of the KHIE; require additional or different obligations of or restrictions on the parties; address obligations of Participants who are not HIPAA covered entities; and address changes in applicable laws and/or guidance [PS 4.0]	<p>GOEHI staff in consultation with the Privacy and Security Committee, representatives will review the PA that is in use for the pilot; evaluate its use; and determine if revisions are necessary</p> <p>Review to be conducted in November 2010 and at six month intervals thereafter during the roll-out of the KHIE <u>or</u> as functionality is added to the KHIE</p> <p>Revisions to the PA will be submitted to the KHIE Coordinating Council for review and comment within 30 days (subject to change) of receipt from the Privacy &amp; Security Committee</p>
<i>Action Step 4.7</i>	Add provisions to the Participation Agreement for Participants who are covered by the federal law that protects the confidentiality of substance abuse records, 42 CFR Part 2 (Part 2), to enable such Participants to share protected substance abuse records with KHIE as a qualified service organization [PS 4.1]	GOEHI staff in consultation with Privacy and Security Committee representatives will develop and recommend additional provisions necessary for Part 2 Compliance by affected participants by November 2010
ONC Legal & Policy Domain Requirement	Identify and harmonize federal and state legal and policy requirements that enable appropriate HIE services that will be developed over the first two years	
<i>Action Step 4.8</i>  ONC Legal & Policy Requirement L.6	Address and reconcile the inconsistencies of health care facility licensing regulations [PS 5.0]	<p>GOEHI staff with input from the Privacy &amp; Security Committee will work with CHFS Division of Licensing and Regulation to recommend a course of action to the KHIE Coordinating Council to reconcile the inconsistencies</p> <p>To be initiated by November 1, 2010 or within 3 months of approval of the State Plan by ONC</p>
<i>Action Step 4.9</i>	Address the need for special requirements under federal and state law relative to sensitive patient information [PS 5.1]	<p>GOEHI staff in collaboration with the Privacy &amp; Security Committee will work with public health and CHFS legislative staff to recommend a course of action to the KHIE Coordinating Council</p> <p>To be initiated by September 1, 2011</p>

<b>Goal 4.0</b> <b>Assure trust of information sharing through the development of a privacy and security framework for State HIE efforts that aligns with the HHS HIT Privacy and Security Framework (PIN July 6, 2010)</b>		
<i>Action Step 4.10</i>	Review legal analyses performed by states bordering KY to determine inconsistencies with Kentucky's requirements for the electronic exchange of health information and identify the best options for addressing the inconsistencies and facilitating HIE [PS 5.2]	To be initiated by GOEHI staff by February 2012  GOEHI and its representatives will pursue participation in ONC-RTI funded efforts to build on the previous work of the Health Information Security & Privacy Collaboration (HISPC) project to pursue development of template language for interstate agreements or other mechanisms that will enable interstate HIE despite differences in state laws
ONC Legal & Policy Domain Requirement	Ensure policies and legal agreements needed to guide technical services are implemented and evaluated as part of annual program evaluation	
<i>Action Step 4.11</i>	Establish programs to audit and monitor KHIE compliance; investigate the feasibility of using an independent firm to perform a defined level of auditing on a regular basis, such as annually [PS 3.3]	GOEHI in coordination with OATS HIE staff and the CHFS Privacy and Security Officers will develop policies and procedures by March 2011
<i>Action Step 4.12</i>	Maintain audit logs for tracking and investigation purposes [PS 3.5]	It is a function of the KHIE Framework
<i>Action Step 4.13</i>	Develop protocols for routine penetration testing [3.1]	KHIE Vendor(s) as part of the contractual scope of work
ONC Legal & Policy Domain Requirement	As the KHIE matures, identify additional types of data that should be available within the KHIE and develop policies and procedures relevant to access and use of data, including the development of an "Opt-Out" model for patient consent that also accommodates specific consent to disclosure when specially protected health information is available for exchange and can be managed within the confines of available staff and not be burdensome to participating providers	
<i>Action Step 4.14</i>	Develop an "Opt-Out" model for patient consent (defer until the KHIE framework can support the opt-out function) [PS 1.0]	Action items and timeline to be developed during the third project year prior to the annual update of the State HIE Strategic and Operational Plan during December 2012-2013 for implementation during 2013
<i>Action Step 4.15</i>	Delay exchange of specially protected information with Participants through the KHIE until such time as it has developed a process for obtaining patient consent that meets the requirements of the federal and state laws that afford greater protection than HIPAA's Privacy Rule [PS 1.1]	

Goal 4.0 Assure trust of information sharing through the development of a privacy and security framework for State HIE efforts that aligns with the HHS HIT Privacy and Security Framework (PIN July 6, 2010)		
Action Step 4.16	Once the Opt-Out process is determined, educate patients about their options and provide a broad range of resources to make patients aware of the benefits of participating in the KHIE and their options for controlling their own medical information [PS 1.2]	
Action Step 4.17	Once the Opt-Out process is determined, educate providers about patient options in order to manage questions at the point of care [PS 1.3]	
ONC Legal & Policy Requirement 0.2	Annually update the State HIE Plan to address the implementation and evaluation of policies and legal agreements related to HIE	
Action Step 4.18  ONC Legal & Policy Requirement L.4	Update Strategic and Operational Plan annually  (Corresponds to Action Step 1.12)	Update to be done annually, beginning in February 2011; GOEHI will solicit Committee input in December/January annually; revise and submit State Plan to KHIE Coordinating Council for review and approval in January of each year

<b>Goal 5.0</b> <b>Support alignment of HIE with Medicaid, Public Health Programs, Behavioral Health and Other Federally Funded State and Local Health Care Programs (PIN July 6, 2007)</b>		
July 6, 2010 PIN Requirement	Establish an integrated approach including having both programs represented in the state's governance structure and processes	
	<b>ACTION REQUIRED</b>	<b>EXECUTION</b>
<i>Action Step 5.1</i>	<p>The KHIE Coordinating Council's membership includes the CEO of a Federally Qualified Health Center who also serves as Chair of the Provider Adoption &amp; Meaningful Use Committee</p> <p>He will facilitate the signing of a memorandum of understanding between GOEHI and the Kentucky Primary Care Association to expedite connectivity between the KHIE and the state's FQHCs</p> <p>The Commissioners of the Department for Medicaid Services, Department for Public Health, and Behavioral Health are members of the KHIE Coordinating Council</p> <p>The Commissioner of the Department for Public Health provides oversight for the State's Title V Maternal Child Health Program &amp; the Ryan White AIDS Program</p> <p>The Assistant Director of the Kentucky Office of Rural Health serves on the KHIE Coordinating Council and is a member of the Provider Adoption &amp; Meaningful Use Committee</p> <p>Each of the state's two RECs is represented on the KHIE Coordinating Council</p>	Ongoing
<i>Action Step 5.2</i>	During implementation of the KHIE regional rollouts, staff from GOEHI will outreach to the VA hospitals and health centers to inform them about the KHIE and discuss connectivity and sharing of information	Beginning October 2010

<b>Goal 5.0</b> <b>Support alignment of HIE with Medicaid, Public Health Programs, Behavioral Health and Other Federally Funded State and Local Health Care Programs (PIN July 6, 2007)</b>		
<i>Action Step 5.3</i>	Annually update the State HIE Plan to address statewide HIE alignment with other federal programs	Update to be done annually, beginning in February 2011; GOEHI will solicit Committee input in December/January annually; revise and submit State Plan to KHIE Coordinating Council for review and approval in January of each year
	A Population Health Committee has been created to advise the KHIE Coordinating Council on population health issues, many of which directly involve or overlap with federally funded state and local health care programs; their recommendations follow:	
<i>Action Step 5.4</i>	Adoption of a guiding set of principles to underscore the collection and use of population health data in support of a learning health system [PH 1.0]	Population Health Committee will draft a set of principles and recommend adoption by the KHIE Coordinating Council by January 1, 2011 for inclusion in the State HIE Plan during the annual update in January-February 2011
<i>Action Step 5.5</i>	Use of an integrated approach with state and local public health agencies to support providers in achieving meaningful use and in identifying opportunities to involve public health beyond meaningful use [PH 2.0]	GOEHI, the Department for Public Health, Department for Medicaid Services, and the Population Health Committee will continue to pursue opportunities to integrate state and local public health agencies On-going
<i>Action Step 5.6</i>	Support for the modernization of state and local public health systems so that they are fully interoperable with the KHIE (and by extension, those of hospitals and other healthcare providers) [PH 4.0]	Interoperability with the KHIE will be accomplished by the end of 2010 for the state public health laboratory and the immunization registry. The Department for Public Health has identified disease reporting and syndromic surveillance as the next priority (Refer to action step 3.18)
<i>Action Step 5.7</i>	Development of policies and procedures to guide the collection and use of population health data including privacy; appropriate use and access limitations; data ownership; patient consent; individual choice and awareness of how data are to be used; quality and integrity; timely bi-directional exchange; streamlined reporting requirements; and mechanisms for transparency and availability [PH 5.0]	GOEHI staff in consultation with the Department for Public Health, the Population Health Committee, and the Privacy and Security Committee will draft policies and procedures by July 2012 and/or in alignment with meaningful use criteria that may be developed for population health beyond stage 1  The Population Health Committee will review the use of population health data by other HIE, identify policies and procedures, and other guidance that has been developed to support the collection and use of population health data through HIE and prepare a set of recommendations by October 2011 for consideration by the KHIE Coordinating Council and GOEHI in updating the State HIE Plan in January 2011

<b>Goal 5.0</b> <b>Support alignment of HIE with Medicaid, Public Health Programs, Behavioral Health and Other Federally Funded State and Local Health Care Programs (PIN July 6, 2007)</b>		
<i>Action Step 5.8</i>	<p>Utilization of existing registries of population health data in support of improving population health [PH 6.0]</p> <p>Utilization of population health data to identify and address health disparities to improve the health of at-risk and other vulnerable populations and support access to existing healthcare resources [PH 6.1]</p> <p>Utilization of population health data to assess the healthcare needs of the community to guide the deployment of finite resources in ways that maximize impact and demonstrate value [PH 6.2]</p> <p>Communication of essential health information, including population health findings, through diverse channels to support improvements across the continuum of personal, community and population health to elevate the health of all Kentuckians [PH 6.3]</p> <p>Promotion of the use of patient portals and other types of personal electronic health records to engage and empower patients to take an active role in their health and their health care [PH 6.4]</p>	<p>GOEHI staff in consultation with the Department for Public Health, the Population Health Committee, and the Privacy and Security Committee will draft policies and procedures by July 2012 and/or in alignment with meaningful use criteria that may be developed for population health beyond stage 1</p>
<i>Action Step 5.9</i>	<p>Identification of emerging issues, including the implementation of Federal health care reform legislation that impact and/or create opportunities to improve population health through health information exchange [PH 7.0]</p>	<p>GOEHI, Department for Public Health, the KHIE Coordinating Council, and the Population Health Committee</p> <p>Ongoing</p>

<b>Goal 6.0</b> <b>Ensure Consistency of HIE Services with National Policies and Standards</b>		
July 6, 2010 PIN Requirement	Ensure HIE services funded through the State HIE Cooperative Agreement are consistent with national standards, NHIN specifications, federal policies and guidelines, and are based on technologies that are adaptable and flexible for future requirements, including exchange of information across state boundaries	
	ACTION REQUIRED	EXECUTION
<i>Action Step 6.1</i>	<p>Keep providers/administrators informed and up-to-date on new developments [IS 1.0]</p> <p>Create a WIKI/Blog/SharePoint, Listservs and e-newsletters for use in sharing various tools, information and techniques [IS 1.1]</p> <p>State membership and participation in standards committees and organizations such as HL7 and certifying organizations [IS 1.2]</p> <p>Communication through forums (both virtual and real), newsletters and meetings to discuss the current state of KHIE and future plans [IS 1.3]</p>	<p>Regularly scheduled technical calls hosted by the KHIE Vendor held no less than monthly or more frequently as need is indicated (ongoing)</p> <p>OATS HIE staff will provide monthly updates to the GOEHI website and through Gov.Delivery (sent as listserv and/or as a newsletter) (ongoing)</p> <p>Inform the ONC and CMS of State interest in participating in standards committees and certifying organizations; respond to requests for nominations, etc. (effective immediately)</p> <p>The Interoperability and Standards Committee of the KHIE Coordinating Council will continue to meet on a regular basis with meeting notices placed on the GOEHI website for participation by interested parties (ongoing)</p>
<i>Action Step 6.2</i>	Identify strategies for leveraging current public and private HIE capabilities to complement and support ONC requirements by assessing HIE capabilities through a survey to identify and develop complementary functionality, standards of compatibility, and integration of Master Patient Index (MPI) and Record Locator Service (RLS) capabilities [IS 2.0]	<p>Coordinate with the readiness assessment questionnaire that will be developed and completed by hospitals wishing to connect to the KHIE; identify other organizations, entities, HIE, etc. that should be part of the survey; develop questionnaire and administer as an on-line survey</p> <p>To be administered by OATS HIE staff with the assistance of the Interoperability and Standards Committee; to be completed by October 1, 2010</p>



<b>Goal 6.0</b> <b>Ensure Consistency of HIE Services with National Policies and Standards</b>		
<i>Action Step 6.3</i>	Pursue the development of future functionality, with the following priorities in mind [IS 3.0]: <ol style="list-style-type: none"> <li>1. KHIE should become the <b>on-ramp to state registries</b> that are required by ARRA (i.e., immunization, syndromic surveillance, &amp; reportable lab data).</li> <li>2. Incorporate <b>bi-directional functionality</b> with existing networks (Regional, State and National).</li> <li>3. Develop <b>master facility and master clinician database</b>.</li> <li>4. Develop <b>secure messaging</b>.</li> <li>5. Develop and agree to <b>unique identifiers for patients</b>.</li> <li>6. Develop <b>tools for federated MPI's and RLS</b> as the KHIE reaches out into other HIEs.</li> <li>7. Become the <b>on-ramp to the NHIN</b>.</li> <li>8. Understand <b>"brokers" medical information systems vendor's approaches</b> to the problem (i.e. McKesson /Relay Health, Emdeon, Availity, Surescripts, etc.)</li> </ol>	<ol style="list-style-type: none"> <li>1. Under development ( Refer to action steps 3.12, 3.17, 3.18)</li> <li>2. Under development (Refer to State Plan narrative)</li> <li>3. Ongoing discussion</li> <li>4. Under development (Refer to State Plan narrative)</li> <li>5. Under development (Refer to State Plan narrative)</li> <li>6. Under development (Refer to State Plan narrative)</li> <li>7. Under development (Refer to State Plan narrative)</li> <li>8. To be assessed and reported during readiness assessment completed by hospitals wishing to connect to the KHIE; to be determined during KHIE participation during the RFP process and the selection of EMR vendors by the RECs for the EMR purchasing program. Findings as they become available will be reported to the I&amp;S Committee</li> </ol>
<i>Action Step 6.4</i>	Continue to identify interdependencies and risks; develop mitigation strategies to address these risks. [IS 4.0]	Interoperability and Standards Committee, KHIE Vendor(s), and OATS HIE staff on a regular basis in conjunction with I&S Committee Meetings  Ongoing

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### B.1.3—TECHNICAL INFRASTRUCTURE

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The importance of standards to promote interoperability cannot be overstated. The Commonwealth recognizes the need to adopt HHS established interoperability standards and certification requirements. These standards may cover coding, storage, interfaces, security regimes (including access and authentication protocols, data recovery, back-up, continuity, and auditing), organizational processes and technical functions for data sharing. Adhering to each standard is critical in achieving interoperability to support user adoption and meaningful use.

The KHIE utilizes a hybrid framework, which includes interfaces to support health data exchange but is vendor and technology agnostic with the focus on enabling optimal connectivity and interoperability.

The core components of the statewide KHIE include: a master patient/person index; record locator service; security; provider/user authentication; logging and audits; alerts.

The system supports electronic prescribing, the exchange of patient demographics, laboratory and image reports, past medical diagnoses, dates of service, hospital stays, immunization data, and provider portals. (Patient portals will be added later.) The KHIE also provides clinical guidelines/rules for chronic disease management for diabetes, asthma, cardiovascular disease, childhood and adult immunizations, etc. (Please refer to Appendix J for a descriptive diagram of the KHIE.)

The KHIE architecture supports meaningful use interoperability standards, is built upon Service Oriented Architecture and aligns with MITA 2.0 framework. Information exchange is accomplished via web services and has the capability to push or pull data using CCHIT standard messaging. The methods of exchange for the KHIE include the Continuity of Care Document (CCD), which will not be available until sometime in 2011.

The KHIE has identified three levels of connectivity for hospitals and providers. At the silver level, a CCD will be pushed from the KHIE to the participant. The gold level allows for a push and pull of the CCD and the platinum level uses the XDS repository. The following tables outline the formats used for the KHIE exchange and the code sets used in the KHIE.

KHIE Exchange Formats	
Format	Description
<b>HL7 CCD</b> <i>(Continuity of Care Document)</i>	The CCD is a CCHIT certifiable format for exchanging an electronic patient health record.
<b>IHE - XDS</b>	Cross-Enterprise Document Sharing (XDS) is focused on providing a standards-based specification for managing the sharing of documents between any healthcare enterprise, ranging from a private physician office to a clinic to an acute care in-patient facility and personal health record systems
<b>Eligibility Data – ASC X12N 270/271</b>	Eligibility Inquiry and Response
<b>Claims Data – ASC X12N 837I, P, D</b>	Medical Claims Submission

<b>RX Claims Data – NCPDP5.1</b>	Pharmacy Claims Submission and Response
<b>e-prescribing Data – NCPDPScript8.1</b>	e-prescribing; refill request, refill response; RX cancel messages, eligibility queries; formulary inquiry and response; RX history queries and Response
<b>HL7 version 2.5, 2.3.1</b>	Lab order and response, scheduling, clinical ordering; referrals, clinical data exchange
<b>HL7 Registration, Admit Discharge</b>	HL& Patient Registration Message, Hospital Admit, Hospital Discharge Information
<b>KHIE Code Sets</b>	
<b>Format</b>	<b>Description</b>
<b>ICD-9 CM Codes</b>	International Classification of Disease
<b>CPT/HCPCS Codes</b>	Common Procedure Terminology
<b>CDT Codes</b>	Common Dental Terminology
<b>UB04 Revenue Codes</b>	For Hospital procedures
<b>SNOMED</b>	Systematized Nomenclature of Medicine (SNOWMED) for Patient History information
<b>NDC</b>	National Drug Codes
<b>LOINC</b>	Logical observation identifiers names and code, lab ordering and results exchange

The functionality of the KHIE is intended to satisfy the final definition of meaningful use including: patient portal; CCD; public health reporting using standard HL7 messages; capability to report electronically the outcome measures including public health reporting E-prescribing; capability to interface with the state owned and private labs; connection to the NHIN; 6 clinical rules will be included on the initial roll out; and, standards based interfaces. The KHIE also will support clinical quality reporting to Medicaid and Medicare.

In addition to the CCD method of connectivity, KHIE will offer an alternate method of connectivity. KHIE will sub contract with a vendor who will offer the edge server connection and will offer an EMR-Lite and provider portal to a virtual health record to those providers and hospitals that choose not to connect through the CCD. This will allow for rapid implementation and a timely solution that combines the capabilities of both systems to accelerate the project trajectory and provide a range of robust connectivity options to connect and begin using the KHIE to meet stage 1 meaningful use. The EMR-Lite will be available to providers at no cost and is intended to serve as a bridge to the provider's purchase of an EHR system. It will supply the functionality to support stage 1 meaningful use.

Development of the KHIE is being completed in three phases. By the completion of Phase 1 on October 30, 2010, the implementation of the edge server exchange framework will be completed. This framework will include the Master Patient Index and Record Locator Service, and will provide connectivity to the pilot hospitals, state public health laboratory, and one private lab. The functionality provided to the pilot sites on October 30 will include: Exchange/Clinical Messaging; EMR-Lite; I-Hub; e-order (laboratory order/response); e-prescribing; and a provider portal to a virtual health record. Continuity of Care Document (CCD) connectivity with the Medicaid environment will be available through the Provider Portal. The system will be supported by the KHIE Clinical Rules Engine. The pilot hospitals desiring to do, can continue to do QRY^T12 to KHIE

Web Services for CCD. KHIE will continue to support silver level connectivity and gold level connectivity. Gold level connectivity is currently in the user Acceptance testing phase by CHFS.

By October 30, CCD connectivity will be established with the edge server exchange framework to provide it with the capacity to “pull” the c32CCD using the existing KHIE CCD orchestration process that is already in production. Connectivity between edge server framework and KHIE will be done via an HL7 message exchange. The edge server exchange framework will issue the query to the KHIE through the HIEPartnerService Web Services and the KHIE will respond with A DOC ^ T12 with the appropriate recipient’s CCD. During Phase II, the focus will be on the rollout of the KHIE while expanding connectivity to additional hospitals and physicians.

During Phase III, the KHIE CCD Orchestration will become agnostic to its data contributors, relying solely on the RLS/XDS.b registry as pointer to various data contributions. Completion of this activity will create the possibility of moving the orchestration process into the edge server exchange framework. Additionally, a personal health record will be incorporated into the joint framework.

**KHIE Interoperability and Standards Committee:** The Interoperability and Standards Committee has been tasked with assisting GOEHI in developing a plan that includes the incremental development of technical infrastructure and functionality of the KHIE to support health information exchange across the continuum of care, leverage shared directories and other services, facilitate Inter-State connectivity, and support connectivity to NHIN. The following summarizes the Committee’s findings and recommendations, which were accepted by the KHIE Coordinating Council. An action plan to implement the recommendation is included in the State HIE Operational Plan under Goal 6.0: Ensure Consistency of HIE Services with National Policies and Standards.

**Interoperability:** In the review of interoperability standards, the Interoperability and Standards Committee found competing and evolving standards and nuances of interpretation of these new standards.

1. Many EMR vendors are new to the standards such as CCD that are required to make a HIE work. As these exchanged data become more integrated into the patient’s record in the receiver’s EMR, these nuances become more pronounced. While vendors can use tools such as the CCHIT’s Laika system to validate CCDs, there will still be issues as the vendors close in on a single interpretation of these standards.

Selection of competing standards needs to be reviewed from the perspective of the target audience, as standards that may be more technically elegant may not be as useful for the end user.

Mitigation:

- a) Participate on standards boards to understand how these issues are being resolved by other states and/or by the vendors.
- b) Develop policies to ensure validation against tools such as CCHIT’s Laika.
- c) Develop policies to do some simple validation of data as it passes through KHIE and generate compliance feedback reports back to providers.

2. Infrastructure needs to be built to support NHIN standards.

As it appears that the NHIN is trying to provide leadership in this arena, the question is will the NHIN compete with the state HIEs, and what role will it play? While there needs to be national guidance on implementation of HIEs, the KHIE as well as other states are very much ahead of NHIN in implementation and experience.

Mitigation:

- a) Continue to review advice from the ONC and NHIN regarding methodologies and standards evolve.
- b) Subscribe to the tools, etc. offered by the NHIN.

3. Define vocabularies and the plan as these vocabularies evolve (i.e. ICD-9 to ICD-10).

Standards will evolve but due to the complexity of the federated HIE data model, it will be logistically impossible to coordinate a network wide hard “cut over” to new vocabulary such as the impending ICD-10 migration. While the CCD does include a vocabulary encoding scheme as an attribute to each observable, there may be issues with leading edge providers and sending vocabularies that trailing edge providers may not be able to accept yet.

Mitigation:

- a) As a part of the KHIE’s function, it may need to provide translation services to standardized vocabularies if needed by the provider.
- b) Communicate with providers to remind them of impending changes to vocabulary standards.

4. Offer or identify validation tools.

Validation tools will be the method used to make sure there is little variance in the interpretation of the standards. Organizations such as CCHIT have Laika, a tool to validate CCD and to help validate vendor’s compliance. These are the same tools that should be used by the KHIE to do its validation.

Mitigation:

- a) As a part of the communication plan, recommended tools should be posted to allow vendors' and providers' technical staff to certify their output.
- b) Provide sample KHIE output for EMR validation and a robust UAT (testing/certification database) for testing complete connectivity.
- c) Provide a best practice test plan for validation of new implementations of the KHIE connectivity as well as re-test for periodic re-certification during software upgrades.

5. Insure that the KHIE has met certification(s)

Certification is critical to the success of this endeavor. While it appeared that CCHIT would be the de-facto certification body, recent events have proved that CCHIT may be one of several certification bodies. This would mean that KHIE may have to meet multiple and potentially conflicting certifications.

Mitigation:

- a) Continue to monitor the certification process as it evolves, and the organizations that will be approved to do certification.
- b) With the help of the KHIE Coordinating Council, determine which certification(s) will be supported.

#### 6. Data normalization standards (who and to what standard)

As data are collected from disparate sources that may use varying nomenclature, vocabularies or versions of tools will require that the consolidated data be normalized at the KHIE level. This process would need to be in place in order to process clinical alerts, for the provider to integrate these data into the EMR.

Mitigation:

- a) Monitor best practices from the NHIN and other networks on how this function would be best performed.

#### 7. Duplicate data will exist in the KHIE due to the federated model.

Because the KHIE will pull from sources such as registries, insurance databases, and provider clinical repositories there will be a greater chance that the same data will exist in multiple databases. These data will need to be presented only once to the clinical staff.

Mitigation:

- a) Create technologies that de-duplicate the data before it is presented into the CCD.

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### B.1.4—BUSINESS AND TECHNICAL OPERATIONS

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#### **Current HIE Capacities:**

The KHIE has been charged with developing strategies for leveraging current public and private HIE capabilities to complement and support ONC requirements by assessing HIE capabilities through a survey to identify and develop complementary functionality, standards of compatibility and integration of Master Patient Index (MPI) and Record Locator Service (RLS) capabilities. ONC requires that the state plans **shall** address and enable:

- E-prescribing
- Receipt of structured lab results
- Sharing patient care summaries across unaffiliated organizations

These components support stage 1 meaningful use for eligible providers.

The sharing of patient care summaries will be enhanced when multiple HIEs can share data from their provider constituencies. This is especially important in a state such as Kentucky where other local and state HIEs have been or are establishing a presence within their respective communities. Emphasis will be placed on complementary functionality, standardization of communication protocols and integration of MPI and RLS capabilities.

1. Develop and execute HIE capabilities assessment survey for complementary state/local HIEs (Intra- and Inter-state) to include:
  - a) Current functionality
  - b) Planned functionality
  - c) MPI and RLS strategies and capabilities
2. Evaluate and prioritize approach to other HIE organizations
3. Establish connectivity to RHIOs and HIEs
  - a) Health Bridge (Northern KY) RHIO
  - b) Northeast Kentucky RHIO
  - c) Indiana HIE
  - d) West Virginia
  - e) Others, as appropriate

The scope of clinical data available from patient care summaries can be augmented with Payor Based Health Records (PBHRs) available from state-based and commercial health plans (i.e. KY Medicaid and Humana, Inc.). These PBHRs generally support identification of services rendered by all providers filing claims with the health plan over the period of time that the patient is covered by that insurance. Some PBHRs also include prescription data and lab results.

In instances where health plan data are not available or are incomplete, connectivity for both submission and receipt of clinical data related to lab results and e-prescribing needs to be established. To this end, other organizations will be engaged to augment the clinical data exchange. These include:

1. State Lab data
2. SureScripts for patient prescription data

Additional value will be realized by both the provider and state/local agencies when connectivity is established to share actionable, event driven data that may otherwise be difficult to submit or retrieve. The HIE will serve as the tool to connect providers with:

1. Immunization registry(s)
2. Communicable diseases registry(s)
3. Local and State public health alerts

### **State Level Shared Services and Repositories:**

**Master Patient Index (MPI):** The KHIE framework uses a MPI that can find and return patients based on many items of patient information. The system allows the configuring of search parameters that require multiple items of patient information for the return of results, greatly



reducing the chance of physicians accessing protected health information for patients they aren't treating.

**Record Locator Service:** When a participant in the statewide HIE is attempting to locate a patient in the HIE, that participant will send a request to the MPI PIX (patient identifier cross reference) manager by submitting a standardized PIX query. The PIX Query transaction carries the local record number (MRN) and locates the MRN within the PIX manager. Once found, the PIX manager, as the name suggests, cross-references the submitted MRN with other record numbers that have been associated with that MRN when the original PIX feeds were submitted to the exchange. Providers also have the ability to query the statewide HIE using demographic information for those patient encounters for which no MRN has previously been established or communicated with the PIX manager for cross-referencing. The Patient Demographic Query transaction will allow basic patient demographic information to be submitted to the MPI for patient location by leveraging statistical matching.

**Interoperability and Standards Committee Recommendations:** Pursue the development of future functionality, with the following priorities in mind:

1. KHIE should become the **on-ramp to state registries** that are required by ARRA (i.e., immunization, syndromic surveillance, & reportable lab data).
2. Incorporate **bi-directional functionality** with existing networks (Regional, State and National)  
Description: Develop the ability to share patient care summaries across unaffiliated organizations and networks.
3. Develop **master facility and master clinician database**  
Description: Master Clinician Index (MCI) will contain relevant information on all registered clinicians within the State, and eventually be reconciled with the State's licensure system. The Master Facility Index (MFI) will include organizational details about the connecting entities such as HIOs, hospitals, providers, and clinics.
4. Develop **secure messaging**  
Description: Allows secure clinician to clinician messaging for registered users of the eHealth Network.
5. Develop and agree to **unique identifiers for patients**  
Description: Participate in dialog and adopt an industry standard methodology for a unique patient identifier.
6. Develop **tools for federated MPI's and RLS** as the KHIE reaches out into other HIEs.  
Description: Develop tools for communicating with other networks that may have a different infrastructure than KHIE.
7. Become the **on-ramp to the NHIN**  
Description: Proposal for a single statewide implementation of the NHIN Connect gateway available as a web service for authorized users and entities. This service is the required standard for interoperability with federal agencies, and the proposed standard for the exchange of clinical information across the NHIN.

8. Understand “**brokers**” **medical information systems vendor’s approaches** to the problem (i.e. McKesson /Relay Health, Emdeon, Availity, Surescripts, etc.)  
Description: As EMR vendors attempt to create their own networks to allow their customers to achieve meaningful use, they may create their own networks

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### B.1.5—LEGAL/POLICY

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The following recommendations, which have been translated into action steps for the State HIE Operational Plan, represent a starting point for the ongoing process of identifying privacy and security concerns and developing policies and procedures to assure patients and their providers that personal health information is kept private and secure. The recommendations, which were developed by the Privacy and Security Committee and approved by the KHIE Coordinating Council, reflect the complexity of the issues, the interdependencies and associated risks, and the high need of transparency and stakeholder participation at all levels of policy development.

#### **Patient Preferences – Consent/Authorization to Participate in or to Opt-Out of HIE**

The Kentucky Health Information Exchange (KHIE) initial pilot currently operates using the consent given at the original point of care. The general standard for health information exchange under HIPAA is that authorization is required. The most common exception is 45 CFR 164.506 commonly referred to as TPO, treatment, payment, and operations. This exception allows protected health information (PHI) to be exchanged for the purposes of treatment, payment or operations without authorization. Kentucky state regulations governing medical records lack a treatment, payment or operations exception. There are Kentucky regulations considered to be more restrictive than HIPAA. Thus the practice in Kentucky is to incorporate a patient authorization or release of information in patient registration materials to ensure that providers may disclose information for treatment, payment, or operations. The PHI provided to the KHIE is being exchanged according to the information releases collected by the providers at the time of treatment.

Demographic information from any patient treated at a participating provider could be included in the Master Patient Index (MPI). The MPI will include information such as name, address, DOB, and gender. The KHIE will also maintain a Record Locator Service (RLS) as part of the HIE. The RLS will include indexed location information about the patient’s record. This will permit KHIE queries to locate patient information and build a Continuity of Care Document from information retrieved from the participating provider’s location medical record system. The MPI and the RLS will be kept in a secure location managed by the KHIE selected vendor. The original participants in the KHIE determined this model to be the most advantageous method to enable the quick inclusion of information through the KHIE. The use of the original provider authorization No-Consent is made possible by the limited uses of information permitted under the original Participation Agreement. Currently, the KHIE and its participants have agreed to exchange information only for treatment, payment and limited operational purposes designed to permit Kentucky Department of Medicaid to fulfill the terms of the funding grant. Ideally, the goal is for the KHIE to support meaningful use and to assist providers in qualifying for HITECH subsidies relative to meaningful use.

User involvement is a foundational construct for openness and transparency of the KHIE operations. Under the federated model of the KHIE, the patient information will not be centrally stored by the KHIE. Rather, the medical record will remain within the local systems of the participating providers. The KHIE will use the MPI and RLS as a directory for locating the full medical information for an individual. Additionally, the KHIE software will retrieve and deliver the records. Because the records remain in the custody of the provider, the patient has greater control of the medical record information.

The KHIE will not exchange specially protected health information until such time as it has developed a process for obtaining patient consent that meets the requirements of the federal and state laws that afford greater protection than HIPAA's Privacy Rule. Thereafter, the KHIE must have the technical architecture to exchange such specially protected health information of only those patients who have provided (and not withdrawn) specific consent.

Currently, the only source data available in the KHIE is claims data from Medicaid. While the KHIE staff is currently using technical means to limit access to the records that are afforded greater protection than HIPAA affords, this method of filtering the restricted information will not work as well when health care providers begin to make their patient records available through the HIE. Furthermore, providers generally believe it is important for them to have access to complete patient data in order to provide appropriate treatment.

The consent process also affords an opportunity for patient consent required for specially protected health information to be made available by the KHIE for uses that require patient consent/authorization. The Privacy and Security Committee recommended and the KHIE Coordinating Council agreed that an effective HIE needs patient consent to build a complete and clinically actionable profile of their medical information that adds value for other providers using the KHIE. As part of accounting for patient preferences, a robust HIE will need more patient input than a general Opt-Out model affords.

**Recommendation PS 1.0:** Examine options for development of an "Opt-Out" model for patient consent that also accommodates specific consent to disclosure when specially protected health information is available for exchange and can be managed within the confines of available staff and not be burdensome to existing providers.

**Recommendation PS 1.1:** Delay exchange of specially protected information with Participants through the KHIE until such time as it has developed a process for obtaining patient consent that meets the requirements of the federal and state laws that afford greater protection than HIPAA's Privacy Rule.

**Recommendation PS 1.2:** Once the Opt-Out process is determined, educate patients about their options and provide a broad range of resources to make patients aware of the benefits of participating in the KHIE and their options for controlling their own medical information.

**Recommendation PS 1.3:** Once the Opt-Out process is determined, educate providers about patient options in order to manage questions at the point of care.

## **Policies and Procedures for Preserving the Privacy and Security of Health Data Exchanged through KHIE**

- Generally
  - Policies and procedures should be established by the KHIE with advice and recommendations by the Coordinating Council and its Committees who have knowledge/experience relevant to the particular focus of the policies and procedures. Such policies and procedures should be made available on GOEHI's website. The policies should be broadly stated with the related procedures being more specific and detailed and subject to change more frequently as technology and standards (or other variables) change. The Committee agreed it was probably sufficient for KHIE Participants to be afforded opportunity to comment on such via representation on the Coordinating Council and with notice of meetings to discuss such policies to be provided to each Participant's designated contact person.
  - Policies and procedures may be amended from time to time so long as amendments are not inconsistent with the Participation Agreement and notice is provided to Participants along with an opportunity to contribute.
  - Participants should be given a reasonable period of notice prior to the implementation of proposed policies and procedures.
  - Policies and procedures are necessary to facilitate exchange of information in compliance with HIPAA's Privacy and Security Rules, other applicable federal law, and applicable state law. Policies and procedures should govern the use, submission, transfer, access, privacy and security of data.
- Security
  - Policies and procedures should be established as necessary to reasonably assure compliance by KHIE (and its subcontractors) with the standards of the HIPAA Security Rule applicable to Business Associates of HIPAA covered entities.
  - Additionally, the Committee recommends that policies address the following issues:
    - Positive patient identification for data returned to the requestor;
    - Standards for establishing the data elements required as part of the request process;
    - Standards for identifying provider of patient data (source);
    - Encryption of data in transit and during vendor caching for the HIE;
    - Standards that define Participant's responsibilities dealing with identifying internal users of HIE data;
    - Master Patient Indexing (establish standards regarding which identifiers will be used, how are they weighted, which algorithms should be used, then continuously update such standards based on feedback from Participants); and
    - Timing and procedures related to caching of data.
- Privacy
  - Policies and procedures should be established as necessary to reasonably assure compliance by KHIE (and its subcontractors) with the standards of the HIPAA Privacy Rule applicable to Business Associates of HIPAA covered entities.

- The Committee will need to consider further the responsibility of Participants and KHIE to correct known errors in patient information, misidentification, and patient requested amendments. The Committee recognizes that this responsibility facilitates the data integrity and quality principle espoused by the ONC. However, the Committee also recognizes the challenges that accompany this responsibility and the communication of the changes or errors to Participants who have received information affected by the changes.
- If the KHIE is required, or HIPAA covered entities are required, to account for disclosures made through an HIE for purposes of treatment, payment and operations under new HITECH requirements, then the infrastructure to provide such an accounting will need to be developed and a process will need to be developed to provide such information to patients and participating covered entities upon request.
- As the KHIE grows to include source data beyond Medicaid data, the Committee will need to consider whether additional types of data should be available within the KHIE. For instance, the current Participation Agreement states that the following information will be made available by Participants who have committed to be Data Providers: hospital-specific inpatient data, outpatient surgical data, ED data and ambulatory care data. Information relating to advance directives or power of attorney documents may be important to HIE Participants, also.

**Recommendation PS 2.0:** Develop policies and procedures for preserving the privacy and security of health data exchanged through the KHIE to assure compliance by KHIE (and its subcontractors) with the standards of the HIPAA Security Rule applicable to Business Associates of HIPAA covered entities.

**Recommendation PS 2.1:** Develop policies to address the following issues: positive patient identification for data returned to the requestor; standards for establishing data elements required as part of the request process; standards for identifying provider of patient data (source); encryption of data in transit and during vendor caching for the HIE; standards that define Participant's responsibilities dealing with identifying its own internal uses of HIE data; Master Patient Indexing standards; and timing and procedures related to caching of data.

**Recommendation PS 2.2:** As the KHIE matures, identify additional types of data that should be available within the KHIE and develop policies and procedures relative to access and use of the data.

**Strategies for Risk Management/Mitigation and Ongoing Compliance with security and Privacy Standards as They Are Developed**

- A. The Committee recommends that policies and procedures be developed to manage breaches and misuse of health information, including systems monitoring and establishing security, workforce training and reporting procedures.
- B. As part of the regular assessment and monitoring of the KHIE system, protocols should be established for penetration testing of potential vulnerabilities to prevent intrusion by hackers, malware, and viruses. Similarly, review the penetration testing developed by vendors who handle patient information. Although the Committee has not determined the

standards for the assessment and testing, the Committee does suggest an independent party regularly review both the Cabinet implementation of the HIE and standards used by its major contractor(s) to manage the HIE.

- C. Policies and procedures should be developed to address enforcement of obligations, investigations and resolutions of potential breaches/misuses/non-compliance, and notifications of identified breaches/misuses/non-compliance.
- D. Programs should be established to audit and monitor KHIE compliance, vendor/subcontractor compliance, Participant compliance and take corrective action when necessary. Consider using independent firm to perform defined level of auditing on a regular basis, such as annually.
- E. Contingency and disaster recovery plans should be developed to avert disruption in business operations of KHIE.
- F. Audit logs need to be available for tracking and investigation purposes. Details about type of data accessed, by whom, and when (but not the actual PHI accessed) need to be available upon request by Participants to facilitate investigation and compliance monitoring. Audit logs will also assist when it is necessary to notify data recipients of incorrect, updated or misidentified information.
- G. The Committee recommends that a disclaimer be added to CCD format to warn recipients about potential gaps in data (coverage or treatment), potential mismatches of data, and recommendation that recipient verify and validate data prior to relying on it when practicable.
- H. Consider policies and procedures to encourage Participants to notify HIE of known inaccuracies and mismatches of data shared through the HIE. This would include situations in which a patient's identity is being used by someone other than the actual patient.

**Recommendation PS 3.0:** Develop policies and procedures to manage breaches and misuse of health information.

**Recommendation PS 3.1:** Develop protocols for routine penetration testing.

**Recommendation PS 3.2:** Develop policies and procedures to address enforcement of obligations.

**Recommendation PS 3.3:** Establish programs to audit and monitor KHIE compliance; consider using an independent firm to perform a defined level of auditing on a regular basis, such as annually.

**Recommendation PS 3.4:** Develop contingency and disaster recovery plans for the KHIE.

**Recommendation PS 3.5:** Maintain audit logs for tracking and investigation purposes.

**Recommendation PS 3.6:** Add a disclaimer to the CCD format to alert recipients to potential gaps in data (coverage or treatment), potential mismatches of data, and recommend that recipient verify and validate data prior to relying on it when practicable.

**Recommendation PS 3.7:** Consider policies and procedures to encourage Participants to notify the KHIE of known inaccuracies and mismatches of data shared through the KHIE.



## Model Trust/Data Sharing Agreement

- A. Participation Agreement and Business Associate Agreements currently in effect will be used as starting point. These documents establish the framework of legal responsibilities of Participants and the KHIE. The Participation Agreement incorporates by reference the policies and procedures established for the KHIE.
  - 1) The same agreement must be signed by all Participants to reduce the resources necessary to negotiate and to help establish trust among all Participants.
  - 2) All Participants should have the same obligations with respect to the privacy and security of Protected Health Information, even if not HIPAA covered entities.
  - 3) The Participation Agreement is a living document and will continue to be modified as necessary to implement any changes to the initially contemplated structure of the KHIE, to require additional or different obligations of or restrictions on the parties as recommended by the Coordinating Council, Privacy and Security Committee or any other committees of the Coordinating Council, to address obligations of Participants who are not HIPAA covered entities, and to address changes in applicable laws and/or guidance.
- B. The federal law that governs the confidentiality of alcohol and drug abuse patient records, 42 CFR Part 2 (Part 2), is applicable to the sharing of substance abuse information with health information exchanges. The law imposes restrictions on disclosure of any information disclosed by a Part 2 program that would identify a patient as a substance abuser. Generally, patient consent must be obtained prior to disclosure, except in situations of medical emergencies, audits, and evaluations. Beyond medical emergencies, audits, and evaluations, a Part 2 program may share information without patient consent for administrative purposes with qualified service organizations (QSOs) and with entities that have direct administrative control over the Part 2 program.

**Recommendation PS 4.0:** Consider the Participation Agreement as a living document that will be modified as necessary to: implement changes to the initially contemplated structured of the KHIE; require additional or different obligations of or restrictions on the parties; address obligations of Participants who are not HIPAA covered entities; and address changes in applicable laws and/or guidance.

**Recommendation PS 4.1:** Add provisions to the Participation Agreement for Participants who are covered by the federal law that protects the confidentiality of substance abuse records, 42 CFR Part 2 (Part 2), to enable such Participants to share protected substance abuse records with KHIE as a qualified service organization.

### **Legal Barriers and Solutions**

Below are legal barriers that have been identified by the Kentucky e-Health Privacy and Security Collaboration and discussed more fully in its 2007 report. Additional legal barriers have been identified by the Privacy and Security Committee and also discussed below.

- A. Inconsistent and antiquated facility licensure regulations.



Kentucky's health facility licensing laws and regulations and their differing confidentiality provisions have been identified as a major barrier to the interoperability of health information. Kentucky's medical records provisions are found largely in Kentucky Administrative Regulations (KAR) Title 902, Chapter 20. These regulations govern licensure of various types of health care facilities, including but not limited to hospitals, skilled nursing facilities, and home health agencies. In these regulations, there are multiple standards for retention, access, disclosure and transfer of medical records across different types of health care facilities. In some cases, the regulations require a "proper release" to transfer records to another health care provider for the purposes of treatment. This language differs significantly from HIPAA's exception for treatment, payment and operations. While HIPAA created a national baseline for protecting health information, it did not necessarily remove existing state law barriers to the exchange of electronic health information. Where state law provides more stringent protections for privacy and security, state laws "preempt" or override HIPAA. Thus, state regulations requiring a release are more stringent than HIPAA and therefore preempt HIPAA.

On the other hand, when state laws and regulations do not meet HIPAA's standards, then HIPAA preempts state law. This interaction means that a preemption analysis has to be performed that compares state law and HIPAA to determine whether state or federal law governs in a given circumstance. In Kentucky, collaborative work by the HIPAA Action Workgroup of Kentucky (HAWK), the University of Kentucky and others have attempted to clarify state law preemption issues for providers and practitioners. Further analysis is needed in order to build the technical infrastructure of an HIE to accommodate each affected type of health information or health care facility providing data to the exchange.

Much of Kentucky law and regulation governing health care and public health were passed prior to the conceptualization of an electronic health record. In some cases, law and regulation may simply be out-dated and have not changed in decades to reflect current practices. The law has not kept pace with new technology developments. Emerging practices such as e-prescribing, health information exchange, RHIOs, and personal health records are so new and dynamic that health care entities may be operating without clear legal parameters.

- B. Special requirements for sensitive patient information such as HIV/Aids, sexually transmitted diseases, substance abuse records, and mental health records.

State laws lack consistent standards for protecting sensitive patient information such as HIV/AIDS, sexually transmitted diseases, mental health records, substance abuse records and communicable diseases. In order to implement an HIE it will be important to identify whether these laws require modification to accommodate the electronic exchange of information and the technical modifications to an electronic exchange that may be required in order to comply with state law.

Additionally, federal law provides a very strict blanket of protection on substance abuse health information. These stringent laws create a barrier to the electronic exchange of

information. It will be necessary to review the operational options available to participants of an exchange as well as any technical modifications to the electronic exchange to permit the release of information only as permitted under these federal laws.

C. Definition of “medical record.”

Kentucky law requires health care providers to provide, without charge to the patient, a copy of the patient’s medical record. Kentucky law is not clear on what specifically constitutes a patient’s medical record. Furthermore, the HIPAA privacy rule defines “designated record set” as a group of records maintained by or for a covered entity that includes the medical and billing records about individuals maintained by or for a covered healthcare provider. This definition has been viewed as overly broad for HIE purposes. For example, a diagnostic image that has been interpreted by a specialist traditionally has not been treated as being part of the “medical record” while the actual interpretation has been included. However, under HIPAA, the actual image could be considered part of the designated records set.

D. Status of records in the possession of one provider but received from another provider.

The status of records in the possession of the first provider but received from a second provider presents a legal barrier in the context of an HIE as it pertains to the health information transmitted by the first provider. It is likely that the first provider will choose to include the health records in the records provided to the exchange. The resulting benefit is that it may make a record available that would otherwise not be in the exchange (due to the second provider’s nonparticipation in the exchange). However, the first provider will need a mechanism to adequately identify such records in the exchange for purposes of its own liability protection because the first provider is not capable of certifying the accuracy or completeness of the second provider’s record.

E. Lack of clarity regarding authorized patient representative.

Kentucky law has been perceived as lacking clarity related to personal or legal representatives. In most cases, under the HIPAA Privacy Rule, healthcare providers must treat a personal representative just as the provider would treat the individual who is the subject of the protected health information. Thus, under federal law, a personal representative has all the rights that a patient would have with respect to access and control of the individual’s protected health information. Under Kentucky law, however, a personal representative is a special category of legal representative allowed only under certain circumstances, such as:

- When a court has appointed someone as a legal guardian,
- When an individual has been granted specific power of attorney to act on behalf of a patient, or
- When a patient lacks “decisional capacity” and there is no legally executed document directing who should make health care decisions for the patient.

When a patient has not designated in writing a particular individual to make decisions for him or her, personal representative status is granted in descending order to the following classes of individuals:

- Judicially appointed guardian, provided that medical decisions are within the scope of the guardianship;
- Spouse of the patient;
- Adult child of the patient or a majority of children if the patient has more than one child;
- Parents of a child;
- Nearest living relative; or
- Executor of a patient's estate.

Moreover, the personal representative is not generally treated in the same manner as the individual patient and can only give authorization for disclosure of protected health information relating to the matters for which he or she is representing the patient. Minors are also afforded special rights under Kentucky law and may seek treatment without parental consent under certain circumstances. When such minors exercise their right to provide consent on their own behalf for treatment, they may serve as their own personal representative and control access to their medical information. Therefore, it may be unclear who has authority to provide consent/authorization to disclose information for an incapacitated or intellectually disabled patient, or minor patients. Clear guidance may be required to health care entities concerning the disclosure of protected health information to legal representatives and concerning the authority of legal representatives to control access to the disabled or minor patient's health care information.

- F. Unknown requirements with bordering states to all exchange of out-of-state records and with out-of-state providers.

Kentucky patients are often treated at facilities in other states, particularly since seven states border Kentucky. Authorization for the transmission of records through a health information exchange that is legally sufficient in one state may not meet the standards of another state. This issue may require case-by-case analysis of bordering states' privacy laws and the ability to implement technology to assist in effective transfer of health information in compliance with such laws.

- G. Allocation and limitation of liability.

Regardless of the disclaimers in the Participation Agreement, the potential for compensable patient harm in relation to health information exchange has the potential to deter full participation. Healthcare providers may be reluctant to participate in an exchange if there is a perception that having access to a patient's medical history and records will subject them to greater liability. For instance, if a patient suffers harm, such as a medication error, and a review of prior medical records available in the exchange would have revealed an adverse reaction to such medication, will the availability of information pose as a source of potential liability to the provider?

Additionally, providers may be reluctant to participate out of fear that the exchange exposes them to liability for privacy and security breaches outside of their control. The fears can be alleviated by education to providers on the best ways to use HIE and ways to reduce their liability for use or non-use of information obtained through the exchange. Openness and transparency of the HIE, its safeguards and policies may also help to reduce these concerns. A new state law or regulation specifically addressing HIE could also address limits of liability if HIE participants comply with the established privacy and security standards and provide reasonable safeguards.

**Processes to address state law barriers:**

- Request revision to individual state laws or develop model state law for Health Information Organizations.
- Modification of health care regulations.
- Analyses of bordering states law for inconsistencies.

## APPENDICES

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The following appendices are attached:

- Appendix A – Health Referral Region Profiles
- Appendix B – Kentucky Referral Region Map
- Appendix C – CHFS Organizational Chart
- Appendix D - Accountability and Transparency Committee Report
- Appendix E – Business Development and Finance Committee Report
- Appendix F - Interoperability and Standards Committee Report
- Appendix G - Provider Adoption and Meaningful Use Committee Report
- Appendix H - Population Health Committee Report
- Appendix I - Privacy and Security Committee Report
- Appendix J – KHIE Architectural Design
- Appendix K - State Lab Participation Agreement
- Appendix L – Medicaid Business Associate Agreement
- Appendix M - GOEHI/OATS KHIE Project Management Organization Chart